

FIRST LANGUAGE LISTENING COMPREHENSION: VALIDATING EXEMPLAR GRADED  
MATERIALS (WITH EXPOSITORY INPUTS) FOR SCOTTISH S3/S4 PUPILS

(Volume 1:)

Michael John Wallace

Ph.D.  
University of Edinburgh  
1988



## CONTENTS

### Volume 1

Abstract	
Acknowledgements	
	Page
Chapter 1: The Place of Listening in the English Syllabus	1
Chapter 2: The Nature of Language Comprehension (1)	16
Chapter 3: The Nature of Language Comprehension (2)	51
Chapter 4: Project-related Materials - General Rationale	96
Chapter 5: Project-related Materials - Description and Trialling	124
Chapter 6: Conclusions Arising From The Project and Possible Applications To The Present Context of Language Teaching in Scotland	208
Bibliography	227

### Volume 2

Appendix A: Materials - Sets 1, 2, 3	236
Appendix B: Materials - Sets 4, 5, 6	363
Appendix C: Data from Prediction Trials	443
Appendix D: Articles and Papers	467

Note: A more detailed contents list of Volume 2, including transcript page references, is to be found at the beginning of that volume.

## ABSTRACT

The thesis relates to the devising of expository inputs, with appropriate exercises, intended to develop listening comprehension skills in mother-tongue speakers of English in Scottish Secondary Schools, with special reference to S3 and S4 (Grades 10/11) at all levels: Foundation, General and Credit. 210 pupils from four different Scottish Secondary Schools were involved in the trials.

Inputs and exercises were influenced by studies relating to both reading and listening comprehension, and in particular by research done in connection with the Scottish Education Department Listening Comprehension Project, (1982-85).

Inputs were devised which were graded according to various text organisation factors, in particular (1) whether or not their input was pre-structured, i.e. based on a given text-organisation framework, and (2) the degree to which the given structure was signalled in the input. On experimental trialling with S3 Foundation and General pupils, a significant main effect for grade was discovered ( $p < .003$ ); within this, the presence of pre-structuring was a significant factor; there was also an observed difference for the degree of signalling, but this was not statistically significant.

Tasks were devised with respect to: the use of pre-questions, followed by either oral or pictorial response; use of text-organisation analysis charts; and prediction, both from a title and in-text. A trend for pre-questions to facilitate comprehension was discovered, but this was not statistically significant. Text organisation analysis: the trialling showed the unexpected result that, given appropriate support, pupils from S3 General level upwards can handle text-organisation charts with ease, and even S3 Foundation pupils can handle them successfully, albeit with more difficulty. Prediction from a title: pupils found it easier to make predictions from "prompts" than to construct their own. In-text prediction: it was not possible to validate the scheme of grading devised, but it was noted that predictions where the pupils were out of sympathy with the views being expressed by the speaker proved less likely to be realised in the text, than predictions made with respect to more neutral topics. There was also some indicative evidence of the value of group-work in improving pupils' responses, and in raising the quality of collective responses.

## ACKNOWLEDGEMENTS

My greatest debt is obviously to my supervisor, Dr Alan Davies, Head of the Department of Applied Linguistics, Edinburgh University, without whose sympathetic guidance this thesis would never have been completed.

I would also like to thank:

Professor Gillian Brown, who first suggested to me that my work for the Scottish Education Department's Listening Comprehension Project, of which she was the Director, might be used as the basis of a doctoral thesis. She was also my supervisor until she left Edinburgh University;

Dr Bill Gatherer, Chairman of the Project Advisory Committee, and the other members of the Committee, for their supportive advice and comment at the various Committee meetings;

Dr Anne Anderson and Dr Tony Lynch, my colleagues on the Project for their very useful suggestions and for the many stimulating discussions we had while working together;

The following teachers, who either trialled materials on my behalf or allowed me to trial materials in their classrooms: Mrs Helen Dawson (Dalkeith High School), Mrs Liz Herd (West Calder High School), Mrs Pat Robson (St Mary's Academy, Bathgate), Mr Scott Griffith (Head of English Department, Liberton High School), Mr Mike Falconer, Ms Joyce Fergie and Ms Carrie Woolverton (all of Liberton High School);

Mr Gordon Kirk, Principal of Moray House college, who approved a time-allowance for me to take part in the Project;

Mr Jim Morrison, Director of the Scottish Centre for Education Overseas, for his supportive interest in the final stages of the work.

I would also like to thank my wife, Eileen, for putting up with my preoccupation with this research over a period of many years, and for her active involvement in helping me to get supplementary classroom data.

Last, but by no means least, I would like to thank the effervescent Carole Jackson, who performed the mammoth task of typing a complicated manuscript with her usual unfailing good humour.

M J Wallace  
Edinburgh  
August 1988



## Chapter 1

### THE PLACE OF LISTENING IN THE ENGLISH SYLLABUS

#### 0. Overview

In this chapter, the scope of the present enquiry will be outlined. Empirical evidence will be adduced to clarify the role of listening, particularly in learning contexts. An attempt will be made to clarify what is meant by the term "listening" within the area of L1 language Comprehension. The issue of whether listening comprehension skills can or should be taught will be discussed and a general framework within which such teaching might take place will be proposed. There will be a very brief survey of developments with regard to the teaching listening comprehension skills to speakers of English as a Foreign Language.

#### 1. Scope of Enquiry

The core of the present thesis relates to the devising and trialling of principled exercises to develop Listening Comprehension skills in S3 and S4 mother-tongue speakers of English in Scottish secondary schools. The first part of the thesis (especially Chapters 2 and 3) will be devoted to establishing the principles upon which the exercises are based. Chapter 4 is devoted to establishing a general rationale for the Project-related materials which form the core of the

present work. Chapter 5 is devoted to the description of the materials developed and the trialling of them, to be followed (in Chapter 6) by certain conclusions and recommendations. The materials themselves are to be found in Appendices A and B.

## 2. The Role of Listening in communication

Measured even in purely quantitative terms, the important role of listening as a communicative activity is easily established. Spearritt (1962:2) notes that "in a study of 68 adults, Rankin found that 45% of the total time they devoted to communication was spent in listening, 30% in speaking, 16% in reading and 9% in writing (Rankin 1926, Rankin 1930)." In pedagogic contexts the findings point up the role of listening even more. In the same place, Spearritt refers to a study which Wilt (1950) carried out on 530 elementary school children from Grades 1 to 6 in nineteen classrooms which showed that children were expected to listen 57.5% of the time they spent in the classroom, the median daily time being 158 minutes. According to the "Bullock Report" (Department of Education and Science, 1975:142), "There is research evidence to suggest that on average the teacher talks for three quarters of the time in the usual teacher-class situation" (although, of course, there can be no statistics of how much time the target audience spends listening). Going on to higher education Spearritt also cites a study (Bird 1953) of female College students which revealed that 42% of their time was spent on listening, 25% in speaking, 15% in reading and 18% in writing. The Bullock Report notes

that the statistics it has quoted may now be out of date (op cit, p150), but one may note that there is ample evidence from most Classroom Interaction Analyses that in most teaching situations teacher talk predominates, with the corresponding emphasis on the importance of listening as a learning mode.

### 3. The Role of Listening in the Syllabus

3.1 In view of what has been quoted from it in the previous section, it is not surprising that the Bullock Report places emphasis on the importance of listening in the English syllabus. In the summary of recommendations relating to the middle and secondary years, the Report recommends that "There should be a conscious policy on the part of the teacher to improve the children's listening ability" (p526). However, it is noteworthy that the Report goes on to say that this is best achieved "not through formal exercises but by structuring opportunities within the normal work of the classroom" (loc. cit). This contrasts interestingly with the much more programmatic approach to reading adopted elsewhere in the Report (especially Chapter 8, "Reading: The Later Stages"). Why did the Report not encourage teachers to think about a programme for developing listening skills, as is clearly implied in the sections related to reading skills?

3.2 The Report refers to American research which records the results of a programme for the improvement of listening. The authors of the Report are unimpressed by the American research

for three reasons (p150).

- (1) The "short-term gains are open to question." A testing situation "is likely to influence the individual to perform better than he usually does";
- (2) The "actual listening behaviour" (Report's quotation marks) of a group of adults in the USA has little relation to their test scores;
- (3) "...Many of the listening tests and training programmes are based on the reading aloud of written language, which is certainly not representative of the listening skill the individual needs for the varied activities in which he is daily involved."

3.3 On examination, these objections would seem to be either insubstantial or irrelevant. With regard to the first one, of course, it is clear that people may perform better in a testing situation than in one which is relaxed and in which no product is required of them. The same objection could be made of a vast range of research findings, to say nothing of public examinations. This does not seem to be a substantial criticism. Indeed, research done in the United States shows the beneficial effect of Listening Comprehension (LC) training programmes at all levels, with the beneficial effects not always confined to Listening Comprehension. Goldberg (1978) reports on research done with a group of 2nd Grade pupils,

where the experimental group were given a Listening Comprehension training programme in which sequence, main ideas and details were featured. The findings showed that the experimental group showed significantly greater gains than the control group, although the programme did not have a significant effect on Reading Comprehension (but see other findings below). Barker (1977) conducted an experimental LC programme with 185 3rd Grade pupils and 176 5th Grade pupils. The results were that pupils who received either direct or indirect listening instruction made significantly larger gains than those who received no specific instruction. Moving up the school, Boodt (1978) conducted a listening programme using literary texts, using 20 minute long readings daily over a period of 16 weeks. The researcher's hypotheses that this would have a positive effect on critical listening abilities, critical reading abilities and general reading comprehension were all upheld by the data; there was also an improvement in attitudes. At about the same age range (with 6th Grade pupils) there are some interesting findings by work done by Svasti (1985). The population is not quite relevant to mother-tongue teaching since it involves Thai-speaking pupils in an ESL (English as a Second Language) situation, but, in view of the Bullock Report's interest in "language across the curriculum", the research did have a very relevant focus: the effect of listening instruction on the pupils' performance in a Social Studies Unit Test. The pupils were given daily 30-minute lessons over three weeks, in which they were given information about listening, some understanding of the listening process

and practice in skills for comprehension listening. The control group pupils were given equivalent lessons on a different Social Studies Unit from the target one. Both groups were then taught the target Social Studies Unit by a different teacher from the one who had done the preparatory work and independently assessed. The experimental group scored significantly better both in a language awareness test and in the social studies test. At the post-secondary level, but working with disadvantaged students, Amerson (1974) found that the main effects of a LC skills programme were effective beyond the .05 level of confidence. For further, empirical evidence of the positive effect of LC improvement programmes, see the many references in Duker (1968), Devine (1967 and 1978), Sticht (1972) and Lundsteen (1979). The last named also has a very helpful annotated bibliography on all aspects of listening.

3.4 With regard to the Bullock Report's second objection to the American findings (lack of effect on actual listening behaviour), it is difficult to comment without fuller knowledge of the findings referred to, the source of which is not indicated. How was the "actual listening behaviour" and its effectiveness monitored? Was it tested? (See the Report's objections to testing above).

3.5 The third objection (use of read inputs) is, of course, a criticism of the listening skills tests and training programmes referred to, and not of other, more valid tests and programmes



that might well be devised. In any case, listening to what is read aloud (or memorised from a script) is undoubtedly one of the "varied activities" in which people are "daily involved." Indeed, it might be argued that the bulk of listening, apart from conversation, might well be of this variety. If it is true, as has recently been reported, that on average people spend 22 hours a week "watching" (that is, presumably, watching and listening to) television output, one might ask: how much of this is not scripted or semi-scripted (i.e. cued or pre-rehearsed in some way)?

An answer might be found by looking at the "National Top Tens" as given in The Listener (current issue 6.8.1987). The listings show:

BBC 1	-	All top ten shows scripted
BBC 2	-	8 out of 11 shows scripted
ITV	-	8 out of 10 shows scripted
Channel 4	-	7 out of 10 shows scripted.

We could therefore argue that, using the Bullock Report's criterion of "daily activity", a listening skills development programme ought to include listening to scripted input, as well as listening to other kinds of input, including interactive input, where the listener has a chance to intervene, and thus have some control over the input. There seems to be no reason, in principle, why such a valid, balanced programme for developing a range of Listening Comprehension Skills might not

be devised, and the present work is indeed a contribution to that effort.

3.6 The discussion of listening in the Bullock Report is rather fogged by the lack of definition of what kind of listening is being discussed. Sticht and James (1984:293) make an interesting distinction between listening and "auding" corresponding to the distinction between looking and reading. The analogy cannot be exact (few analogies are) but it does point up the use of, for example, decoding skills that are common to both reading and "auding" as opposed to, say, looking at trees and listening to birds. It is not proposed to use the Sticht and James' coinage in the present work, but is useful in highlighting the range of activities that the term "listening" encompasses.

3.7 This problem is approached from a different direction by Brown (1981), who distinguishes between "interactional" (listener-oriented) speech and "transactional" (message-oriented) speech and also between "short turns" and "long turns" in terms of the length and complexity of the input. She suggests that it is in the area of the transactional long turn that competency has to be developed. In Brown and others (1984) reference is made to another kind of input which seems to be a sub-variety of transactional speech which is "written-language influenced speech." The authors note that "Much of the talk heard in discussion programmes on radio and television is of this kind. The formal characteristics of such

language include using long, often Latinate words, and using long, often complex, sentences... Even teachers who are making a very considerable effort to use simple vocabulary often produce quite complex syntax... (Brown and others 1984:16). The antithesis in the last sentence is somewhat infelicitous, but the general meaning is clear, and corresponds to common knowledge. There is clearly a strong possibility that pupils of all normal ranges of ability will be exposed to long transactional turns, and even "advanced" transactional turns of the type that the authors quoted referred to as "written-language influenced speech." Obviously, the ability to handle this kind of input may be crucial at all levels in instructional situations, and will become particularly vital for these who go on to Higher Education. The kind of "listening" involved in these situations is clearly of a different order from that involved in taking part in a conversation, or "interactional" speech as Brown has labelled it. For one thing, and this is a crucial point which will be returned to later, the transactional turns are much more carefully structured, as Brown and others demonstrate (1984:8-11). Evidence will also be advanced later in the present work which shows that pupils in the target group do, indeed, have problems with handling transactional speech, and can be helped with these problems.

- 3.8 The present work is therefore located within the area of the "transactional long turn" as far as listening comprehension is concerned. It is clear that this category subsumes many other

possible sub-categories, ranging from a bed-time story to the Reith Lectures. The huge range of possible types of listening inputs is virtually an open set, and to catalogue them seems pointless. However, the present work will build on the precedent set by Brown and others (1984:65) and Lynch (1984:File 1, p.iv) which distinguish among "static" inputs (e.g. the description of a diagram or a plan), "dynamic" inputs (Lynch instances finding one's way through a map following instructions, listening to a narrative) and "abstract" inputs (Lynch instances "argument", Brown and others "opinion"). The present writer is not entirely happy with the joining together of a dynamic description (e.g. following instructions to find your way through a map) and narrative. Discussion of the theory of comprehension gives a special status to narrative, especially in contrast to expository texts, as will be seen later. As a working division, therefore the following terms will be used: static description, dynamic description, narrative, expository input. These terms correspond approximately to the divisions used by Brown and others and Lynch, but use categories which have been more traditionally established in the literature of language comprehension research. This issue will be returned to later, but at this point all that has to be noted is that the present work is mainly concerned with inputs of the expository type.

#### 4. Listening Comprehension and Foreign Language Teaching

##### 4.1 It has already been noted that the present work is mainly

concerned with mother-tongue teaching of English and not with the teaching of English as a second or foreign language (ESL or EFL). Nevertheless, the present situation is that the vast bulk of materials commercially available are directed at EFL students. It is these materials which have often been discussed and used as exemplars at conferences and workshops concerned with teaching mother-tongue listening comprehension skills. It seems therefore appropriate to discuss albeit very briefly, the reasons for this phenomenon and some of the rationale behind it.

4.2 Listening has always been featured in most general approaches to language teaching. Even the much-maligned Grammar Translation gave due place to spoken input, until it was distorted by the university-controlled public examinations (for a fair-minded account, see Howatt (1984: Ch. 11, pp 131-146)). The very name of the audio-lingual approach, which was the dominant "innovative" movement in Foreign Language (FL) teaching after the second World War would seem to have given Listening its due place. However, although Listening was duly recognised as the first of the "four skills", in effect the main emphasis was an oral production rather than reception and especially at the sentence level and below (e.g. phoneme discrimination). Extended input tended to be pushed into the background.

4.3 Listening came into greater prominence with the development of Communicative Language Teaching with its emphasis on text-based

materials, preferably of an authentic nature (Richards and Rodgers, 1986:79-80). The increasing availability of cassettes and cassette-players made the more "opportunistic" use of recorded listening inputs outside the language laboratory a possibility for many teachers. The consequent increase in marketing opportunities encouraged publishers and materials designers to provide listening text-based materials, some techniques, such as "jig-saw listening" optimally requiring the use of three cassette players simultaneously in the classroom! (See for example, Geddes and Sturtridge, 1979). The increasing emphasis on "authenticity" further encouraged non-native teachers to use materials commercially recorded by native speakers. This was linked to an increasing interest in discourse analysis by linguists and applied linguists, which provided a metalanguage and new conceptual frameworks to teachers and teacher-trainers for handling more extended texts than the isolated sentence (for useful survey of "text linguistics" see de Beaugrande and Dressler 1981). These developments were complemented by and perhaps to some extent inspired by the increasing strength of the cognitivist approach to the psychology of language (exemplified in, for example, Sanford and Garrod, 1981; for a compact but very useful survey see Greene, 1986) and parallel developments in other disciplines such as Sociology (e.g. Gumperz and Hymes 1972). It is probably fruitless to try to assign priority to these various developments (whether technological, commercial, pedagogical or theoretical) but they undoubtedly converged from the late 60s onwards in a way that encouraged the use of larger



and more authentic listening comprehension inputs in EFL classes.

- 4.4 It is also worth noting that, apart from the Communicative Approach, there are other approaches to language teaching which have acquired adherents, although they have not displaced the Communicative Approach as the orthodox approach in this area. Several of these new approaches give more emphasis to the receptive skills than the Communicative Approach does, especially in the initial stages. Examples are: the Total Physical Response (TPR) Method; the Natural Approach; and Suggestopedia, especially in the so-called "seance" sessions (Richards and Rogers, 1986). The approach which obviously features receptive skills most is the Comprehension Approach, sometimes called Comprehension Based Language Instruction (CBLI) - for a brief overview, see Blair (1982), and for more extended accounts, see Winitz (1981) and Burling (1982). According to Burling (1982), for example, the way to achieve correctness in a language is not by learning rules or being drilled in rules, but by being sufficiently exposed to carefully graded oral and written inputs. Eventually, the student will develop a feeling for the language and be able to correct himself, by sensing whether or not the utterance "sounds right" - hence the title of his book: Sounding Right. Such approaches, but notably the Natural Approach, have acquired more credibility because of the influence of the theories of Krashen concerning Second Language Acquisition, and particularly, in this respect, his emphasis on "comprehensible

input", the so-called "input hypothesis" (Krashen, 1982:20-30). These approaches, and the theoretical bases underpinning them are not without their critics - see, for example, the discussion of Krashen's concept of "comprehensible input" in Ellis (1986:157-159).

Fortunately, the rightness or wrongness of these approaches and theoretical positions is an issue which does not have to be decided here. The general point is clear: there has been an increasing theoretical and practical emphasis on the importance of comprehension which has probably helped to consolidate the developing interest in the teaching of Listening Comprehension Skills in FL teaching.

## 5. Summary

One of the aims of this chapter has been to specify more closely the scope of the present enquiry, which is mainly concerned with the development of Listening Comprehension skills in mother-tongue (MT) speakers of English at S3 and S4 level in Scottish Secondary Schools. Within the area of Listening Comprehension, the enquiry is mainly concerned with the receptive understanding of "long turn" inputs of an expository nature. Evidence has been given to show the paramount role, in quantitative terms, of listening both in ordinary life and in academic situations. Some broad distinctions of Listening Comprehension inputs have been made, namely into "short" and "long" turns, and into "interactional"

and "transactional" inputs, although no claim has been made that these are in any sense rigid or (with regard to interaction/transaction) exclusive distinctions. The case for the teaching of Listening Comprehension skills in general to MT pupils in the target population has been argued, and evidence has also been brought forward for the efficacy of Listening Comprehension skill development programmes in a variety of contexts. It has been noted that most of the commercially available materials directed specifically at developing language comprehension skills have been aimed at the EFL market, and some probable reasons for this state of affairs have been presented.

## Chapter 2

### THE NATURE OF LANGUAGE COMPREHENSION (1)

#### 0. Overview

The purpose of this chapter and the following chapter is to give a brief account of some psychological and psycholinguistic considerations which underpin the research specific to the main target group (i.e. Scottish secondary schoolchildren at S3 and S4 level) which will be detailed in Chapter 4. The chapter will be organised in two main sections. The first section will deal briefly with some key aspects of the nature of mother tongue language acquisition, in general terms. The second section will examine some salient aspects of Language Comprehension with reference to the interpretation of words and sentences.

#### Section 1: Recent Trends in the Study of the Nature of Mother-tongue Language Acquisition

- 1.1 This section will very briefly outline the Behavioural view of language acquisition, which was until recently the dominant view. It will discuss some of the reason for that view being rejected by many psychologists. It will outline the cognitive view of language understanding which has largely supplanted it, with particular reference to the topic of Memory. It will then go onto consider language understanding and discuss in general

terms some key features of language understanding within the cognitive approach to the psychology of language comprehension.

These will be taken up in more detail in section 2 within the traditional levels of linguistic concern i.e. syntax and the lexicon.

## 1.2 Language Acquisition: The Skinnerian View

The almost complete eclipse of the behaviourist approach to language acquisition must be one of the most extraordinary turn-rounds in the intellectual history of the last twenty-five years. From a virtually total dominance of the academic scene in this area in the 1950s and early 1960s, it has now been so far discredited that a standard account of Psychology and Language (by H. H. Clark and E. V. Clark) could be published in 1977 in which none of Skinner's works is listed in the bibliography and his name is not even referred to in the index! Nevertheless, any account of the psychology of language as it affects language teaching must start with his work, since the influence of that approach is still very much with us in the teaching of English as a Foreign Language, (and, arguably, in the tardy development of the teaching of higher order mother-tongue comprehension skills).

1.3 Language to Skinner is "verbal behaviour", and like any other kind of behaviour is shaped and maintained by the effects of the environment on it: behaviour which is rewarded by the

environment is acquired and maintained; behaviour not so rewarded is eventually extinguished. Writing his introduction to Verbal Behavior in 1957, Skinner was confident about the effectiveness of this model for explaining language acquisition:

"...recent advances in the analysis of behavior permit us to approach it with a certain optimism ... the basic processes and relations which give verbal behavior its special characteristics are now fairly well understood. Much of the experimental work responsible for this advance has been carried out on other species, but the results have proved to be surprisingly free of species restrictions. Recent work has shown that the methods can be extended to human behavior without serious modifications." (Skinner, 1957; reprinted in De Cecco, 1967:319) In spite of this confidence, he goes on later to make the following remarkable admission:

"... no appeal is made to statistical concepts based upon data derived from groups. Even with respect to the individual speaker or listener, little use is made of specific experimental results. The basic facts to be analysed are well known to every educated person and do not need to be substantiated statistically or experimentally at the level of rigor here attempted. No effort was been made to survey the relevant 'literature'. The emphasis is upon an orderly arrangement of well-known facts, in accordance with a formulation of behaviour derived from an experimental analysis



of a more rigorous sort."

The more rigorous experimental analysis which Skinner was referring to was of course, the experiments in the operant conditioning of pigeons and rats conducted in the famous "Skinner box". (Skinner, 1957; De Cecco, 1967:324-5).

#### 1.4 Language Acquisition: The TG View

Reading these extracts from the introductory section of Verbal Behavior now, the reader cannot help being aware that the views being so confidently expressed are based on very shaky empirical basis indeed, as far as human psychology is concerned. In his review of Verbal Behavior, Noam Chomsky (Chomsky 1959) had little difficulty in demonstrating that Skinner's views were not based on relevant and valid empirical data at all, but were essentially argued for by analogy, and that terms, such as "reinforcement" and "response", which were defined rigorously in the original experimentation on animals, were applied so loosely to human behaviour that they could mean almost anything, or nothing.

- 1.5 Chomsky's critique was not purely negative. His solution to the problem of language acquisition was in terms of a "grammar" of the language (including within this term phonology) although, unlike Skinner, he never claimed that this would be the whole story. However, he did seem to propose the specification of these abstract grammars as the cutting edge of

what was to be later called psycholinguistic research: "Suppose that we manage to construct grammars having the properties outlined above. We can then attempt to describe and study the achievement of the speaker, listener, and learner". (Chomsky, 1959:338)

- 1.6 By 1965 Chomsky had won the argument to the extent that the eminent psychologist George Miller in effect rejected the findings of behaviorism as a major factor in the study of language:

"I will merely say that, in my opinion, their results thus far have been disappointing." (Miller, 1965:340) In the same article, he stated his new position thus (p 346): "If we accept a realistic statement of the problem, I believe we will also be faced to accept a more cognitive approach to it: to talk about hypothesis listing instead of discrimination learning, about the evaluation of hypotheses instead of the reinforcement of responses, about rules instead of habits, about productivity instead of generalisation, about innate and universal human capacities instead of special methods of teaching vocal responses, about symbols instead of conditioned stimuli, about sentences instead of words or vocal hisses, about linguistic structure instead of chains of responses - in short, about language instead of learning theory".

- 1.7 Clearly a new day had dawned, but for the rest of the 60s and into the early 70s, the agenda was still being dictated by

Chomsky and like-minded linguists: the hunt was on to specify the grammar which, in the words of Chomsky previously quoted above, would enable psychologists to "describe and study the achievement of the speaker, listener and learner". While many of Chomsky's major theses were borne out by research, notably the rule-based nature of child language acquisition, psychological experiments based on the particular specification of transformational grammar (TG) and its derivatives did not yield the expected insights into natural language acquisition. In his standard account of cognitive psychology, Solso (1979:322) notes: "The unfortunate conclusion was that a theoretical structure that had promised to be a new and exciting way to understand psychological processes by means of transformational grammar collapsed". He goes on to point out that some things could be salvaged and quotes Brown and Herrnstein (1975) in this respect:

"Good grammars are undoubtedly a part of psychology, for that is what they are all about, and we have not wasted our time in learning how to read such grammars. In so far as grammars are good, they evidently represent much of what speakers know about their language. But it has now been shown that they do not represent the way in which that knowledge is thought to bear on sentences by speaking, understanding, or remembering them. One must figure out how the knowledge in a grammar relates to actual psychological processing and that is what many people are trying to do".

1.8 According to Walter B. Weimer (Weimer 1974:421), a landmark in the development of the new status of cognitive psychology was the Conference on Cognition and the Symbolic Processes at the Pennsylvanian State University in October 1971: "Perhaps the really unique (and promising) aspect of this conference is that for the first time the linguists listened more than they talked. The psychologists dominated the focus and set the topics for discussion, even in traditionally 'purely linguistic' matters ... This reversal is of monumental import for cognitive psychology: It marks the first time in the (recent) history of the discipline that the substantive theory and research has caught up with, and perhaps outpaced, the 'state of the art' in linguistics. It means, in a nutshell, that cognitive psychology may at last be ready to stand on its own feet as an independent discipline". Although linguists might wish to challenge Weimer's view (derivable from Chomsky, in fact) of linguistics simply as a branch of cognitive psychology, two things must be conceded. The first is that for some writers on linguistics, cognitive psychology now indeed "dominates the focus", as can be seen, for example, from the "epiphenomenalist" approach to linguistics put forward by Moore and Carling in their stimulating and well-argued book Understanding Language: Towards a Post-Chomskyan Linguistics (Macmillan, 1982). The second thing is that the advances made in cognitive psychology over the last fifteen or so years have been truly extraordinary. By rigorous and ingenious experimentation, cognitive psychologists seem to be in the process of fulfilling the expectations of a new "science of the

mind" which were aroused by Chomsky in the sixties. In a work of popularisation first published in 1982, Morton Hunt felt able to say (with perhaps some attention-grabbing exaggeration!) that "The practitioners of a new and all but unknown scientific speciality called 'cognitive science' ...have in a mere handful of years, discovered more about how we human beings think than we had previously learned in all our time on earth". (Hunt, 1984: Foreword, P1).

We shall now therefore proceed to very briefly outline the basic framework of the cognitive psychology approach, which will serve as a context for the subsequent discussion of constructivist approaches to language comprehension.

#### 1.9 Basic Framework of Cognitive Psychology

We have noted previously the main concerns of the cognitive approach to psychology, which may be summarised thus (see Howard, 1983:5-6):

- (1) It emphasises knowing rather than responding;
- (2) It emphasises mental structure or organisation;
- (3) The individual is viewed as being active,  
constructive and planful.

Another important characteristic of cognitive psychology is that it is metaphorical in character: "Models of nature, including cognitive models, are abstract organisational ideas

derived from inferences based on observations". (Solso, 1979:16)

1.10 One of the most common kinds of model used in cognitive psychology is the information process (IP) model. A simple version of this model is shown in Figure 2.1. It will be seen that this IP model has three main components:

- 1 Sensory storage (sometimes called "sensory memory");
- 2 Short-term memory (sometimes called "working memory"; often abbreviated to STM);
- 3 Long-term memory (often abbreviated to LTM).

Two aspects of this model are crucial, because they are the basis of much of the experimental work on which the inferences of cognitive psychology are based:

- 1 Information processing takes time, and therefore different kinds of processing will take varying amounts of time;
- 2 The amount of storage possible, certainly in sensory storage and STM, is limited.

In sensory storage incoming stimuli are registered for less than a second. In STM it is considered helpful to think of the system as containing about seven "slots" each of which can



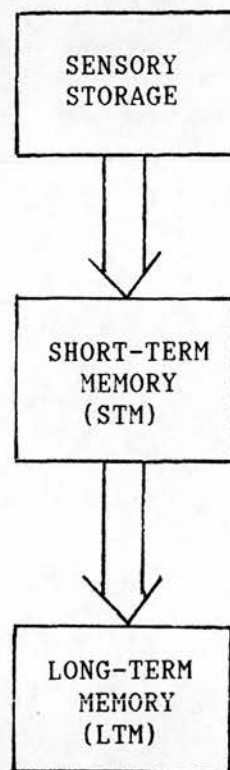
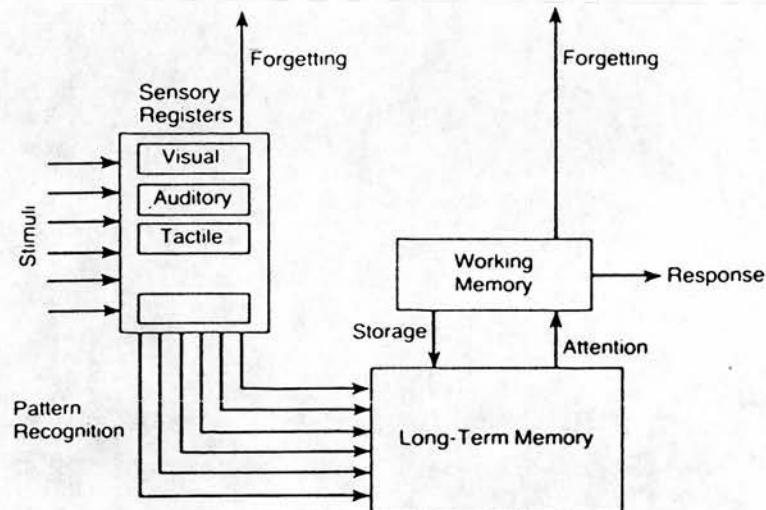


Figure 2.1 Basic Information Processing (IP) Model

contain one item. (Howard, 1983:20) In any event, information in the STM decays within 15 seconds unless it is rehearsed. In long-term memory, on the other hand, it is assumed that once an item has been stored, it is never erased: what we call "forgetting" is actually a problem of retrieval.

- 1.11 The implications of this model are summarised by Howard (1983) in Figure 2.2. Starting at the top left-hand corner, we see that the various sensory registers (visual, auditory etc.) react to external stimuli. Some immediate "forgetting" takes place owing to storage limitations. The stimuli which remain feed into the LTM (bottom right-hand corner of the diagram). This may seem at first sight surprising, but it is necessary to postulate this because of the very important aspect of pattern recognition, of which we shall have much more to say later when discussing language comprehension. By attending to and "recognising" the stimuli, the LTM transfers them to the STM ("Working memory" in the diagram). Again, owing to storage limitations, some "forgetting" may take place here, or the new information may be returned to the LTM where it is held in the LTM store. It is also possible for there to be a response to something held in the STM eg. someone may say "that's a Q" when presented with the letter Q. Such responding is assumed to take up some of the STM's working capacity. (Howard, 1983:24). Of course, stimulus is not always necessary for thinking to take place. Sitting in a darkened room, someone may "attend" to images or ideas in the LTM which may be thus temporarily stored in the STM, and then be "re-stored" in the LTM in an



**Figure 2.2: Information Processing Model  
(Expanded Version)**

(From D V Howard: Cognitive Psychology. New York: Macmillan, 1983: p. 18)

altered form.

- 1.12 There is one more important issue concerning the cognition model under discussion, which relates to the nature of the long-term memory. The point at issue is clearly stated by Franks in his essay entitled "Toward Understanding Understanding" (Franks 1974: 235-236):

"The issue is whether long-term memory (knowledge) is best considered as a generative conceptual system or a storehouse of specific memories of past experiences. The storehouse view has been dominant since at least the time of the British Associationists ... Views stressing storage of specific input items as memory units dominate theoretical and experimental endeavours not only in psycholinguistics but also in more traditional verbal learning and memory... An alternative view, of memory structures as generative systems (represented, for example, by Bartlett, 1932) is far less popular than the specific memory position. It seems obvious that both views must have some validity... What I want to consider is this question: If both types of memory have validity, then why have psychological theorists spent so much time on specific memory (i.e. recollecting) and ignored conceptual memory (i.e. knowing)?"

- 1.13 Franks' cri-de-coeur has not gone unanswered, and standard psychology textbooks tend these days to feature the dichotomy he represented, but using the terminology devised by Tulving

(1972), namely episodic memory for the specific memories of past experiences, and semantic memory for something roughly corresponding to Franks' "generative conceptual system."

Tulving's definition of semantic memory is as follows:

"It is a mental thesaurus, organised knowledge a person possesses about words and other verbal symbols, their meaning and referents, about relations among them, and about rules, formulas, and algorithms for the manipulation of these symbols, concepts and relations." (Tulving 1972, quoted in Solso 1979:171).

It must be seen that Tulving's "semantic memory" like Franks' "generative conceptual system" is essentially constructive rather than reactive. The general approach is aptly summarised in G Mandler's principle that "to organize is to memorize and to memorize is to organize" (G Mandler, 1967; see J M Mandler, 1984:8).

The nature of semantic memory is obviously crucial for any account of language comprehension and will be more fully explored in what follows.

## 2. Section 2: Language Comprehension - Words and Sentences

2.1 This section will be mostly concerned with exploring some possible aspects of the "organised knowledge" which Tulving has

postulated, particularly with reference to words and sentences. The section will begin by contrasting top-down with bottom-up processing. The nature of what might be called "core linguistic knowledge" will be very briefly examined. It will be agreed that core linguistic knowledge is not enough to explain language comprehension, and this argument will be more fully developed in Chapter 3.

## 2.2 Top-down and Bottom-up Processing

Top-down and bottom-up processing are terms derived from the computational model of language understanding (see Brown and Yule, 1983:234; Frederiksen, 1977:313-322). In this case, "top-down" refers to the sentence or longer text taken as a whole. "Bottom-up" processing refers to the procedure of taking each linguistic unit as it comes and gradually building up the meaning of the text from these elements. Traditionally linguistics has favoured bottom-up processing, very often to the extent that anything above sentence level has not even been considered for linguistic analysis. Of course, the processing of individual phonemes, lexical items and grammatical structures is obviously essential for any comprehension to take place at all. At the same time, there is also everyday evidence of listeners "making sense" of nonsensical or very incorrect inputs in accordance with previously established expectations derived from the context. As long as the listener can impose a coherent meaning on the input, he is willing to tolerate, or sometimes even be unaware of, serious phonemic,



lexical and grammatical errors.

Some experimental evidence which supports this point of view has been summarised by Dirven and Oakeshott-Taylor (1984:327):

"Upshur and Palmer (1974) showed that naturally-acquired foreign language, even though it contained grammatical errors, was rated much more highly by native judges than errorless but non-naturally learned (i.e. in school) English. The fact that native listeners do not bother too much about phonetic and syntactic accuracy (cf. Loveday, 1982:146-152) provides indirect evidence that listening does not involve an initial perception and evaluation of low-level elements like phonemes or morphological and syntactic rules; rather listeners pay attention to the communicative success of an utterance and to sociolinguistic and pragmatic rules of authenticity and spontaneity." The conclusion of this quotation may hardly seem justified by the evidence referred to here, but later in their article, Dirven and Oakeshott-Taylor provide several authoritative sources for the phenomenon of "phonemic indeterminacy", where the acoustic signal is so indeterminate in connected speech that it is totally ambiguous or even quite unintelligible when heard in isolation (op cit: 331-332).

They go on to give the following interesting example from Cohen (1977) concerning telephone speech (op cit, p 332):

"A normal telephone line transmits very little of the signal

above 3000 HZ. This means that the acoustic information pertaining to voiceless fricatives - /f,s,θ/ - is largely filtered out. Yet telephone speech - in our own language at least - is readily intelligible. Unless their attention is drawn to the fact, most people are not even aware that the /f, s/ and /θ/ sounds are simply not present." In other words, - the listener automatically adds to the incoming signal to fit in with whatever understanding of the text he has constructed from the input as a whole. One final important point is this topic may be noted from Dirven and Oakeshott-Taylor's survey. It is that we must not assume that the indeterminacy of the signal is constant across all situations. Referring to Nooteboom (1983), they note that we provide our listener with enough information for him to decide our message - and no more. (This point, incidentally, bears interesting comparison with Grice's maxim of "quantity" in interactive discourse (Grice 1975) which will be referred to later). They comment that this is the reason why 'eavesdropping' is one of the more difficult listening comprehension tasks for a foreign language learner. The learner may be able to converse perfectly well with a mother-tongue (MT) speaker of the target language - but as soon as another MT speaker appears on the scene, he finds himself at a loss: "because they have reduced the acoustic-phonetic explicitness of the speech signal to as low a level as possible, consistent with mutual intelligibility".

(op cit:333)

2.3 At a different level of comprehension, Gernsbacher provides a

different kind of evidence (Gernsbacher 1985:344 ff) which she uses to support what she calls "The processing shift hypothesis." She cites several experiments which show that if the reading time for a paragraph is measured, then it is discovered that the initial sentences took longer to read than the subsequent ones. This effect was maintained regardless of where the paragraphs topic sentence occurred.

"In addition, the first sentence of a story's sub-episode (or constituent) took longer to read than other sentences in the constituent (citations). Similarly, in experiments measuring the reading time for each word in a sentence, initial words took longer to read than subsequent words (citations). Moreover, the same word was read more slowly when it occurred at the beginning of a phrase than at the end (citation). With auditory comprehension, latencies to monitor for a target phoneme or word were longer when the target occurred at the beginning of a sentence or phrase than later." (Gernsbacher, 1985:345). Her explanation assumes that the goal of comprehension is to build up a coherent mental representation or "structure". The delays that have been noted above reveal the mind in the process of laying the foundation for a new structure or substructure at appropriate points in the text, which can then be used as a framework for interpreting the incoming signals.

## 2.4 Microprocessing and Macroprocessing

With reference to texts above the level of sentence a similar contrast is made between microprocessing (i.e. local level of processing, at the level of individual propositions) and macroprocessing (i.e. a global level of processing, as in establishing, a gist). Lorch, Lorch, and Mathews (1985) asked themselves this interesting question: do readers do "on-line" processing of a topic structure (macroprocessing) as a normal routine, or, when asked for a summary, do the readers retrieve their representation of the text and apply the macro-operators to produce the requested summary? The latter, which is more economical of effort, Lorch et al call the "lazy macroprocessor" model, since the topic structure processing need not be done at all, except in response to a request, when it can be done "off-line" (i.e. after the text has been read). By using differentially organized texts and measuring reading times, the authors produce statistically significant data which point to the following conclusion: "... the findings of the experiment clearly support the on-line macroprocessor model. According to this model, whenever a shift of topic is encountered in a text, readers retrieve their representations of the text's topic structure and integrate the new topic into their representations." In other words, the construction of a high-level gist-oriented mental organisation of the text in terms of main topics seems to be something which comprehenders feel constrained to do, in spite of the "extra effort" that might seem to be involved.

2.5 It can be inferred from what has been said above, and it also accords with a common-sense view of the comprehending process, that we do not have an either/or situation with regard to top-down or bottom-up processing. Clearly both processes are involved. However, "degenerate" the linguistic input, there has to be something to monitor, whatever the framework that is used. This two-way processing has been demonstrated in a number of contexts. Geleta (1986), for example, used probes to a specific microstructure or macrostructure while his experimental population (60 students) were reading a text on a display screen. Measurements of response time supported his prediction that good readers conduct micro and macro structural representations of the text on-line. Although the present work is largely concerned with longer text inputs (macro-level) it is obviously inappropriate not to consider, however briefly and inadequately, the nature of linguistic knowledge of the interpreting of words and sentences (micro-level) so as to deduce something concerning the comprehension process at these levels.

2.6 Words and Sentences A simple model of basic language understanding would posit that the comprehender (i.e. listener or reader) would first of all process the meanings of words (lexical processing), and then go on to process the grammatical/structural relationships between words in a sentence (syntactic processing), and finally put all this together to establish the meaning of the sentence (semantic processing). (A cogent summary of these issues has been

presented by Greene (1986:53-97), which will be used as a point of reference in what follows.) But how are the meanings of words represented? One possibility is that idea word has its own set of semantic features. Thus, in Greene's example, ball in the sense of 'dance' would have as its features (+ social activity) (+ language) (+ assembly). Ball in the sense of (e.g.) 'football' would have among other characteristics (+ physical object, - human). This is attractive in some ways, but one problem with it lies in the number of features which would be necessary to explain the 'meaning' in every context. Thus in a sentence like this (present writer's examples):

(1) It is significant that she went to her first ball dressed in jeans,

the 'significance' derives from the fact that balls are very formal occasions when only certain types of dress would be appropriate. Similarly, with a sentence like:

(2) "You shall go to the ball!" her father said laughingly,

The word 'laughingly' derives its force from the association of 'ball', and in particular the phrase 'you shall go to the ball', with children's fairy stories. Rather therefore than attempting to pack every possible "semantic feature" into the word, it might be sensible to abandon the linear model and to assume that, while some of the meaning is in the word, the rest of the meaning is brought to the word from the context, from us



the listener's knowledge of the world, etc.

- 2.7 The concept of case-grammar has been advanced by linguists (see Fillmore, 1968) as a means of explaining how words are mapped onto sentences. The basic idea of case-grammar is that certain 'cases' (such as Agent, Instrument etc.) are attached to the verb, and by means of a predicate calculus can attach syntactic relationships to individual verbs eg.:

strike (Agent, object, instrument)

collide (object 1, object 2) (example from Greene, 1986:61).

While this explains some underlying relationships between words very nicely, it soon runs into the same problem of requiring more and more complex selection restrictions to explain relationships which are (or are not possible) beyond the broad-brush treatment of the case relations (e.g. as Greene notes, explaining the oddity of cows that eat honey, bears that eat grass and the normality of cars that eat petrol!).

- 2.8 A different approach was taken by Schank (1972) who instead of attributing features to whole words, suggests that the meanings of words can be "decomposed" into a small set of semantic primitives. So, he assumes that underlying all verbs which describe actions are 12-15 "primitive actions" e.g.

ATRANS: transfer of possession

PTRANS: physical transfer from one location to another

PROPEL: application of force to a physical object.

One of the descriptive economies of Schanks' approach is that all verbs which involve the same primitive automatically have the same case-frame. So the ATRANS case frame would be appropriate for all verbs implying transfer of possession like give, receive, take, buy, sell. Greene (1986:63) offers for comparison with the specifications for strike and collide given in 2.7 above, the following specifications for the same words using semantic primitives:

strike Actor: human (possibly using an instrument)

Act: PROPEL

Object: physical object

Direction To: physical object

From: human

collide Actor: none

Act: PTRANS

Object: at least with physical objects

Direction To: each other

From: unknown.

While it is clear that this specification is much more informative, both syntactically and semantically, than the previous one it still provides a very pared-down version of

even the literal "meanings" of these words. One finds it interesting, for example, that the Webster's Collegiate Dictionary (9th Ed. 1985) gives a quotation for strike which corresponds to the specification given here for collide! ("The two ships struck in mid-channel.") It may be, of course, that Schanks' notion of semantic primitives helps to explain the huge range of meanings of a word like strike by positing a minimal semantic "core" to which is attached meaning derivable from the context. (One thinks of the way that so-called "empty" verbs such as "have" and "do" operate in this respect). If this point of view is correct, however, it brings us back to two-way processing and again rejection of the linear approach. (For further discussion of the semantic primitives approach, and the problems arising therefrom, see Sanford and Garrod (1981), pages 44-53.)

- 2.9 Sentences More work has been done on the interpretation of sentences than the interpretation of words. One of the most influential approaches to the description of sentences has been the syntax-based transformational-generative (TG) approach described by Chomsky (e.g. Chomsky 1965). We have already noted how Chomsky's work revolutionised the study of language; but it must be noted how the way on which the TG rules were expressed gave the impression that this was an actual psychological process for the production of sentences (although Chomsky never claimed this), and was quite misleading in that respect. Further, experimental work, such as Slobin's Sentence Verification experiment (Slobin 1966; Greene 1986:74-75),

showed that certain Passive sentences took no longer to process than their equivalent Active sentences. These and other findings seemed to indicate that semantic processing was at work at the same time as the syntactic processing. This idea can still be accommodated within TG theory, but what is much more at variance with it is "the psychological evidence that people do not wait for a complete syntactic analysis before starting to hazard guesses about what a sentence means". (Greene, 1986:76).

2.10 Syntactic Parsers Unlike grammars, whether of the deep or surface variety, which generally assign descriptions to sentences as completed utterances, the function of Parsers is to model the actual processes employed by language users. Thus, in written English, a parser will operate from left to right (since that is how English is read), or, for spoken English, through time (since that is how language is listened to). Following on from what was said in the last paragraph, the assumption is that at certain points in this left to right process, a reader (for example) will make certain hypotheses about the grammatical structure of the sentence which will either be confirmed or disconfirmed as the processing continues.

2.11 Augmented Transition Networks (ATNs) Greene (1986:76-81) describes in some detail the workings of one of the most commonly used types of syntactic parser, known as Augmented Transition Networks (ATNs), first developed by Woods (1970).

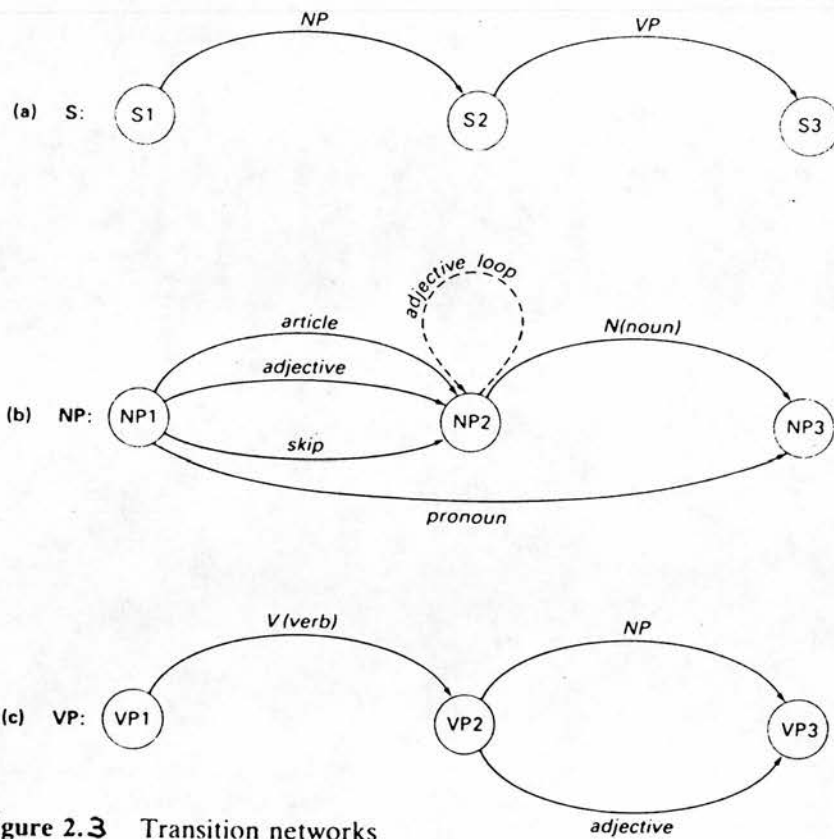


Figure 2.3 Transition networks

(From J Greene: Language Understanding - A Cognitive Approach. Milton Keynes: Open University Press, 1986; p. 77)

Her very clear account will be followed closely here. Transition networks take the form of a series of states with arrows (called arcs) which link one state to the next (see Figure 2.3). The arcs in transition networks are labelled to indicate the rules which allow the parser to move from one state to the next. In Figure 2.3(a), the parser can proceed from state (S1) to state (S2) only if it can 'find' an NP. From state (S2) it can finish the sentence by moving to state (S3), but only if the next constituent it finds is a VP. But how does the parser find an NP? This process is shown in 2.3(b). The parser has four possible expectations: (1) to find an article; (2) to find an adjective (or a string of adjectives: hence the "adjective loop"); (3) to skip straight to the noun as a headword; (4) failing all these, to find a pronoun, in which case it moves to state NP3. A similar process operates for the verb phrase. Greene summarises the process in this way (p 79):

"The parsing process starts with the S network (in Figure 2.3(a)). In order to proceed from state (S1) to state (S2) the parser has to find an NP. To achieve this the parser moves down to the NP network in (b) to follow the arcs necessary to find an NP. Assuming that it has identified an NP and reached (NP3), the parser can report back to state (S2) in the S network in (a). The next instruction to the parser is to find a VP to finish the sentence. The parser starts working its way through the VP network in (c). When it has found a verb to read (VP2), it either follows the adjective arc or it is sent



back to (b) to look for another NP. When this is finished, the parser reports back to the VP network which can then move on to (VP3). Finally, the parser reports back to the S network in (a), that it has found a VP and the parser moves to (S3) to complete the sentence.

This may seem a bit clearer if we follow the parsing of a particular sentence through the transition networks. Let us take as an example our old friend Jane hit the boy. The parsing would proceed as follows through the states and labelled arcs (in Figure 2.3):

(S1) find NP (NP1) skip (NP2) N Jane (NP3) finished (S2) find VP (VP1) V hit (VP2) find NP (NP1) article the (NP2) N boy (NP3) NP finished (NP3) VP finished (S3) sentence finished."

2.12 Problems with Syntactic Parsers The main problem with the ATN model, and indeed all syntactic parsers, is, of course, that sentence processing cannot be entirely a left-to-right process. Very often the information for correct processing decisions is not available at any given state but depends upon information that is only available later on in the sentence. To take the example that Greene uses (p 80), the words The building blocks... can be completed as The building blocks are red or as The building blocks the sun. Researchers are investigating several possible ways in which the parser could operate:

(1) it could "hold" all the possibilities until one of them is

confirmed;

(2) it could go for the most likely or common one until it is disconfirmed; it could then "back up" and start again;

(3) it could look ahead in some way;

(4) it could use the context to decide on the most likely possibility; or it could use a combination of such procedures.

Greene notes that ATNs are called augmented transition networks because "they have the facility to suspend judgement about a group of words by putting them into a temporary store called a register, while they look ahead or consult other components as necessary. These registers allow them to take context into account before deciding which are to take through the transition network." (ibid.)

2.13 Semantic Parsers Many researchers deny the need for a syntactic parser, but prefer rather to consider an approach which goes straight from the surface representation of the sentence to meaning. One particular model using this approach has been devised by Schank (1972) based on his theory of word meanings which can be "decomposed" into "semantic primitives" (previously discussed above in Section 2.8). Taking the sentence The big boy gave Mary some advice, Greene explains how

Schanks' semantic parser would handle it, as follows (p82):

- "(1) Is the first NP human? If so, assign it (The big boy) as the Actor of the verb.
- (2) Which primitive Act is most likely to be associated with the verb? In this case ATRANS (transfer of possession) is the most likely candidate for give. This leads the model to expect an object and a human recipient (i.e. Direction TO).
- (3) Is the next NP human? If so, assign it (Mary) to the Direction To slot.
- (4) Is the next NP a physical object? No; as advice is a mental entity rather than a physical object recategorise give as MTRANS (transfer of mental information).
- (5) Recheck that human Actors and Recipients are appropriate for MTRANS. If so, output semantic representation of the sentence as:

Actor: big boy

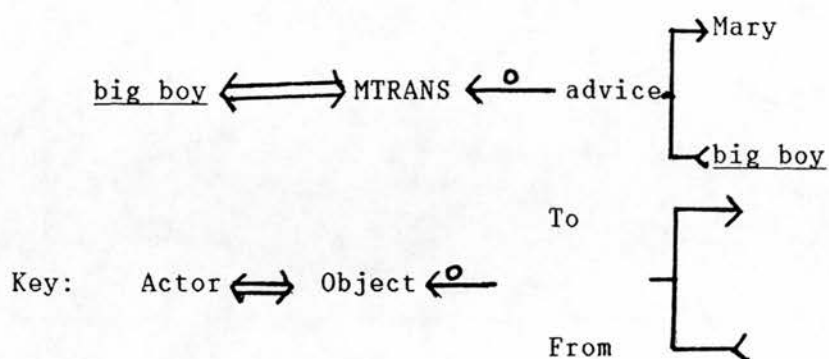
Act: MTRANS

Object: advice

Direction To: Mary

From: big boy."

Diagrammatically, the sentence would be represented thus  
 (ibid, p85).:



It will be clear that this representation could stand for a number of different surface structures e.g. Mary received advice from the big boy; some advice was given to Mary by the big boy etc.

2.14 It is to be noted that semantic parsers still have to avail themselves of syntactic categories, just as syntactic parsers have to avail themselves of meaning; thus, as Greene observes, it is more accurate to speak of semantically driven parsers and syntactically-driven parsers, i.e. categorising them by their basic orientation rather than implying exclusive use of one kind of information rather than the other. However, as long as this is understood, the shorter terms will continue to be used here.

2.15 There is no way at present of conclusively proving which of these two kinds of parsers is to be preferred, or if they work together in some way (e.g. either alternately or in parallel).

There is ample experimental evidence that subjects very quickly forget surface structures but remember the meaning of a sentence, even to the extent of recognising a quite different structure as the one they have read, providing it has the same underlying meaning as the original structure (eg. Johnson-Laird and Stevenson 1970). But as Greene rightly points out, no one has doubted that meaning is what the comprehender is after: such experiments tell us about end-states, not necessarily the processes by which these states are achieved.

- 2.16 In spite of the fundamental uncertainty just referred concerning the procedures, there is no doubt that the parsing approach seems to have a psychological explanatory value of the dynamics of comprehension which previous grammatical descriptions neither had nor usually claimed to have. The left-to-right processing assumption with decision making staging points, and the provision of some kind of storage register which can be the basis for psycholinguistic guessing, all correspond to everyday observation, and what we know of the physiological processes of reading (e.g. left-to-right saccadic movement, occasional regression, and so on). The inspiration for much of this work has been in the domain of Artificial Intelligence (AI) and certain limited success has been obtained in a variety of computer language comprehension programmes using such approaches. But two things must be said about the success of the AI approach: first of all, its success in mimicking human comprehension has been very limited indeed; and secondly, there is no guarantee that computer programming tells

us anything about natural language processing! (See the debate in the 1976 and 1977 volumes of the journal Cognition between Dresher and Hornstein on the one hand and Winograd, Schank and Wilensky on the other. There is a brief discussion in Howard, 1983:324). It might very well be that, just as the "sensible" atomic theory of atoms as the building blocks of the universe had to give way to the absolutely bizarre and unpredictable "reality" of contemporary sub-atomic physics, so the actual natural processes of language comprehension may ultimately be revealed (if they are ever revealed) as infinitely stranger than anything we can presently imagine. With all these caveats, however, the fact remains that the approaches that have been described have provided us with useful metaphors for understanding language process, which have permitted limited experimental verification in ways that have eluded previous descriptions up to and including TG. (We have previously noted that generating verifiable metaphors is a major function of cognitive psychology: see 1.9 above).

- 2.17 Beyond words and sentences In this chapter, we have largely been concerned with the traditional areas of linguistic enquiry: we have mentioned very briefly some problems related to phonological interpretation, and consideration of these led us on to discuss the interpretation of words, and seeing that no satisfactory explanation of language comprehension could be isolated at this level, we went on to consider models for the production and comprehension of sentences. As we noted at the beginning of this chapter, the sentence is traditionally the



upper limit for linguistic enquiry. Professor Lyons, for example, in his fairly recent introductory text called Language and Linguistics (Lyons 1981) makes hardly any reference to anything above sentence level and indeed the words discourse or discourse analysis do not figure as headings in the text, and are not even listed in the index. There are, of course, good reasons for drawing a firm line at the sentence, notably the problem of giving a satisfactorily rigorous definition of any linguistic entity above this level. Nevertheless, cognitive scientists who have attempted to work out models of language cognition have found themselves inexorably driven beyond the sentence. One reason for this is that models which operate only at sentence level produce far too many possibilities to be handled in any useful way, or produce possibilities which are acceptable according to any reasonable abstract model but which prove to be unacceptable, if not ludicrous, in actual given contexts. A second reason is that, as we shall see, making any sense at all of some sentences involves going beyond the sentence and even beyond the immediate context.

- 2.18 Summary In this chapter we have seen how a "simple" behaviourist/associationist approach to language acquisition has largely given way to a constructivist approach, where there is much more emphasis on what the mind brings to the language input, rather than simply the stimulus of the input itself. We have seen that there is ample evidence that a two-way processing is involved in language comprehension, i.e. both bottom-up processing and top-down processing. Indeed, it might

well be more useful to think of language comprehension as not being hierarchical in either direction (up or down) but as heterarchical, a heterarchy being defined as "a formal organisation of connected nodes, without any single permanent uppermost node" (Collins, 1986). Further, it seems likely from the evidence presented here that a complete account of language understanding must go beyond the lexicon and sentence syntax into the area of discourse-processing, which is concerned with longer or complete texts. It is therefore to the level of discourse that we turn in the next chapter.

## Chapter 3

### THE NATURE OF LANGUAGE COMPREHENSION (2)

#### 0. Overview

In the last chapter, it was noted that any attempt to explain language comprehension in terms of a solely bottom-up procedure (i.e. explaining as an aggregation of words and/or sentences) was demonstrably inadequate. Top-down procedures (i.e. from global understanding of whatever kind) are also required. In the present chapter, the issue of language comprehension will be approached from this "macro" aspect. The discussion will be in three stages: First, there will be a discussion of some theoretical issues, in particular the role of previous knowledge and the role of text organisation. Secondly, some practical application of the issues to the teaching of language comprehension will be discussed, with particular emphasis on empirical evidence for the effectiveness of such applications. In the third and last section, it will be recognised that much of the evidence concerning the process and teaching of language comprehension comes from the study of reading processes and the teaching of reading comprehension. In this section, therefore, the issue of the areas of overlap and differentiation between reading comprehension and listening comprehension will be discussed, insofar as they are relevant to the scope of the present inquiry.



## 1. Global Approaches to Explaining Language Comprehension

1.1 In the first section of this chapter, we are going to examine some global or "top-down" approaches to explaining language comprehension. Many of these approaches have been inspired by the attempt to devise intelligent computer systems which are able to simulate certain basic human functions, such as the ability to recognise the same object from different angles, or the ability to demonstrate "understanding" of simple language inputs. The attempt to simulate these processes has revealed the tremendous complexity of apparently simple human abilities.

1.2 Frames. One of the pioneers in this area was Marvin Minsky (see, for example, Schank and Nash-Webber (1975); the same article is also in Winston (1975); references here will be to the latter source). Minsky was originally concerned with visual understanding: how do we make sense of what we see? He found that the only way in which this problem can be handled in simulation terms is by explaining how information is brought to the event as much as it is derived from the event. Minsky's explanation is very clear, and is worth quoting rather fully (Minsky, 1975:212,3):

"Here is the essence of the theory: when one encounters a new situation (or makes a substantial change in one's view of the present problem) one selects from memory a substantial structure called a frame.....

A frame is a data-structure for representing a stereotyped situation like being in a certain kind of living room, or going to a child's birthday party. Attached to each frame are several kinds of information. Some of this information is about how to use the frame. Some of it is about what one can expect to happen next. Some of it is about what to do if these expectations are not confirmed.

We can think of a frame as a network of nodes and relations. The 'top-levels' of a frame are fixed, and represent things that are always true about the supposed situation. The lower levels have many terminals - 'slots' that must be filled by specific instances or data."

In terms of language comprehension, Minsky comes up with a "working hierarchy" of frames. They are:

- (1) surface syntactic frames (mainly verb cases);
- (2) surface semantic frames (instruments, strategies, goals, consequences);
- (3) thematic frames (topics, activities, settings);
- (4) narrative frames (stories, explanations, arguments).

The frames which are of greatest interest here are the thematic frames; what Minsky calls "narrative frames" (somewhat infelicitously, since they seem to be meant to cover many different types of discourse) will be handled later in the

present chapter, under the heading of "text organisation".

- 1.3 Scripts, Goals and Plans. The basic idea of the frame has been developed in various ways. R. C. Schank, for example, stresses the importance of frames which relate to episodes (see Schank, 1975; Schank and Abelson, 1977). He puts it this way (Schank, 1975:267):

"We are saying that the process of understanding is, in large part, the assigning of new input conceptualisations to causal sequences and the inference of remembered conceptualisations which will allow for complete causal chains. To a large extent, the particular chains which result are tied up in one's personal experience of the world. Information is organised within episodic sequences and these episodic sequences serve to organise understanding. The simplest kind of episodic sequence is the script that organizes information about everyday causal chains that are part of a shared knowledge of the world." (My underlining).

The example that is normally used of this kind of causal frame is the "restaurant script." Each script may be a more specific representation (e.g. "coffee-shop") which is called a track. There are certain props (e.g. tables, menu) and roles (customer, waiter, cook etc.). There are also certain entry conditions (e.g. "S is hungry") and certain results (e.g. "S has less money"). The script may be subdivided into scenes (so, for example, the restaurant script may have four scenes:

entering, ordering, eating and exiting). The hypothesis is therefore that whenever the restaurant script is triggered (however that is done), then all the other essential concomitants of the script, as instanced above, will also be triggered and will either be realised or assumed, or will be noted to be in default.

Schank and Abelson (1977) note that not all causal frames are of the script type. They principally instance cause-and-effect related to plans or goals. They argue that goal-directed behaviour will arouse certain normative expectations on the part of a reader or listener; e.g. the decision of someone to go on a holiday will call up a restricted range of possible future actions.

- 1.4 Scenarios. Sanford and Garrod (1981:109-132) stress the importance of what they call "extended domains of reference" as a basis for the interpretation of texts. They argue that when there is a reference to, say, someone "dressing", that a reference domain is set up which includes "transfer of clothes." So, if the word "clothes" is mentioned subsequently in the same text, it will be mapped directly onto this extended reference domain. They say (1981:110) "We shall refer to the account based on extended domains of reference as the scenario account, since one can think of knowledge of settings and situations as constituting the interpretative scenario behind a text."



1.5 Schemata. Brown and Yule (1983) favour the use of the term schemata for the kinds of "knowledge structures" (van Dijk, 1981) that are needed for the organisation and interpretation of experience. They point out that schemata can be viewed in two different ways. They may be seen as deterministic (e.g. racially prejudiced schemata) or as "organised background knowledge which leads us to expect or predict aspects in our interpretation of discourse" (Brown and Yule, 1983:248). It is in the earlier sense that they wish to use the term.

Such schemata will in part be culturally determined. Tannen (1979) describes an interesting experiment in which she got American and Greek students to comment on a 6-minute long movie. She isolated the following schemata (to use Brown and Yule's term): (1) being a subject of an experiment; (2) what's in a film?; (3) expectations about events (e.g. personal encounters, reactions to theft) and expectations about objects (e.g. US students expected roads to be paved). Brown and Yule refer to another paper by Tannen (1980) in which she notes that whereas the American students described in great detail the actual events of the film and what filming techniques had been employed, the Greek subjects produced elaborate stories with additional events and detailed accounts of the motives and feelings of the characters in the film.

Clearly, however, contrasting schemata cannot be only a matter of different cultures in the usual sense. Within each culture there are sub-cultures and Brown and Yule instance an

experiment by Anderson et al (1977) in which a group of female students who were planning a career in music education and also a group of male students from a weight lifting class came up with quite different interpretations of a given text. Presumably, it would similarly not be difficult to show how differing interpretations by individuals might relate to individual, personal schemata, and indeed this is argued by Anderson et al (1977:377).

- 1.6 Constructivist (Knowledge-based) Approaches to Language Comprehension. In the previous sections, a number of hypotheses concerning the process of language comprehension have been briefly described. It will be easily seen that these approaches are complementary to each other, and indeed overlap in various ways. The terms frame and schema seem to be the most inclusive terms, with scenario being of more limited scope, and the terms script, plan and goal being of much more specific application. What all these hypotheses have in common is an emphasis on what the listener/reader brings to the text rather than what the text itself provides. In other words, the listener/reader "constructs" the meaning of the text, using the text as raw material, as it were, and using the frames or schemata which he brings to the text as tools for organising this material. If this general approach is correct then it will, of course, have important implications for the teaching of language comprehension. Is there any evidence for the validity of this approach?

1.7 Empirical Evidence for Constructivist Approach. There is no space clearly in the present work for a full discussion of this important topic, but in what follows some exemplars will be provided of the kind of evidence which has been adduced in support of the constructivist view of language comprehension.

(1) Without a schema, interpretation is impossible. The example which is often used to illustrate this point was ingeniously devised by Dooling and Lachman (1971):

"With locked gems to finance him our hero bravely defied all scornful laughter that tried to prevent his scheme. 'Your eyes deceive', he had said. 'An egg, not a table, correctly typifies this unexplored planet'. Now three sturdy sisters sought proof. Ferrying along, sometimes through calm vastness, yet more often over turbulent peaks and valleys, days became weeks as many doubters spread fearful rumours about the edge. At last, from nowhere, welcome winged creatures appeared signifying momentous success."

Dooling and Lachman were able to show that, without the appropriate frame (Christopher Columbus's Discovery of America), subjects found it extremely difficult to understand or remember this text. (Competitions where one has to identify a common object photographed from an unusual angle and out of context illustrate a similar point).

(2) In potentially ambiguous utterances, the listener/reader will interpret according to a schema.

Sanford and Garrod (1983:7) use this example from Schank (1975):

- (a) John wanted to go to Hawaii
- (b) He called his travel agent
- (c) He said they took cheques.

The correct interpretation of sentence (c) and in particular the establishing of who the referent of He is (i.e. the travel agent) might be explained by postulating that "travel agent" calls up a "script" to which is attached the sort of transactions that are involved in making a trip.

(3) Memory of an input may be affected by a schema. Sometimes listeners or readers will be prepared to (wrongly) say that something took place in the input, which did not in fact take place, if it is predicted from the schema. Alternatively, recipients may interpret an input with an unfamiliar schema in terms of a more familiar one. Research as far back as Bartlett (1932) has examples of subjects actually inventing plausible details of stories on recall; or, in another case, an Indian folk-tale taking on the characteristics of a standard wild west story, obviously a case of listeners/readers relating an unfamiliar frame to a familiar one.

(4) Target sentences which have been activated by a schema will be processed more quickly than those which have not. The example to be discussed here is from Sanford and Garrod (1981:129), and is referred to in Brown and Yule (1983:246). It will be remembered that, in the discussion of Schanks' concept of scripts, it was noted that a given script would also call up certain roles (e.g. "restaurant" calls up "waiter"), whether these roles are actually used or not. Sanford and Garrod instance the following two scenarios:

(a) Title: In Court

Fred was being questioned

He had been accused of murder

Target: The lawyer was trying to prove his innocence.

(b) Title: Telling a lie

Fred was being questioned

He had been accused of murder

Target: The lawyer was trying to prove his innocence

If the scenario (script/schema) hypothesis is correct one would expect that a reader will process Target (a) faster than Target (b), in which a non-specific scenario is involved. Experimentation has shown this to be the case.

Sanford and Garrod (1981) discuss several other examples of experiments of this type which support the scenario hypothesis.

1.8 Inferences. No account of language comprehension, however superficial, can omit discussion of inferences, and this topic should be dealt with at this point since it is important to stress also, in this important aspect of comprehension, how crucial are the schemata which the reader brings to the text. Brown and Yule are very interesting on this subject (1983:256-270). If an inference is seen as some kind of "missing link", Brown and Yule suggest that there exist (at least) two categories of missing link (1983:259): "One kind is automatically made and does not result in additional processing time and the other is not automatic, but is the result of a bridging assumption and leads to additional processing time." In the following example, based on Sanford and Garrod (1981), we have an instance of an automatic (non-inference) missing link:

(a1) Mary dressed the baby

(b1) The clothes were made of pink wool

Missing link: (c) Dressing involves clothes.

In a controlled experiment, Sanford and Garrod compared the time taken to process (a1) and (b1) above, with the following:

(a2) Mary put the baby's clothes on

(b2) The clothes were made of pink wool.

No significant difference in processing time was found. In other words this supports the hypothesis that "clothes" was

automatically triggered by "dressed" and no on-line (real-time) inferring had to be done. Brown and Yule contrast this with Haviland and Clark's (1974) discovery that determining the referent for "beer" took significantly longer in (a/b4) than (a/b3):

(a3) Mary got some beer out of the car

(b3) The beer was warm

(a4) Mary got some supplies out of the car

(b4) The beer was warm.

If Brown and Yule are correct and inferring is properly related to a bridging process that takes place in measurable time, and is dependent on what the listener/reader brings to the text, then it follows that it is "open-ended" and not pre-specifiable from any given text. As they point out, if the reader of (a4) and (b4) are constantly having picnics in which beer is prominently featured, then "beer" might be a necessary feature of their "picnic scenario", and therefore not an inference according to any measurable process criterion.

This points up the co-operative nature of discourse between the giver of the message and the recipient of it (see Grice 1975): a crucial point with very practical pedagogical implications which we shall be returning to later. It is clearly the case that what is implied by the speaker is not always what is inferred by the listener (as such ironists as Dean Swift have discovered).



1.9 Problematic Aspects of Frame Theory. Although it is probably fair to say that frame-theory is the dominant theory in cognitive psychology at the present time, it is by no means universally accepted. Feldman (1975) in an article appropriately entitled "Bad-mouthing Frames" sets the reader this task (p1903):

"Try to introspect as you slowly read the following sentence:

'Imagine yourself walking into a room; it is the master bedroom of a quiet Victorian house, in a slum of Bombay, which has just had a fire and been rebuilt in modern style, except for the master bedroom which is only half remodelled, having its decorative panelling intact but barely visible because of the thick smoke.'

The sentence alone causes several shifts and refinements of the image. The question is, of course, where are the frames. It is possible that there are a very large number of room frames embodying all the combinatorial possibilities hinted at above. Alternatively, there could be a single room frame that incorporated all these possibilities. Neither strikes me as plausible. What seems to happen is that we build our model dynamically as we process the sentence."

Bower, Black and Turner (1979) note the possibility of a "dynamic" building up from an ill-defined model that Feldman has proposed above. They also have other problems: (1) how do

you elicit norms about scripts? (e.g. the Japanese seldom mention that you should take your shoes off before entering a restaurant because it is so familiar); (2) what level of detail do scripts operate at? (compare Shanks' and Abelson's ideas of "tracks" within scripts e.g. restaurant/coffee-lounge); (3) how are scripts learned?; (4) how does the listener/reader decide where a certain fact is to be stored when he has a whole list of scripts in which that fact might be relevant?; (5) how do scripts interact? (e.g. businessmen doing a deal, while playing chess on a train).

Brown and Yule (1983: 240-1) are also concerned about the last point mentioned, and, in addition, about the consideration that "It is an unfortunate, but nevertheless logical outcome of a frame-theory version of how we use our stored knowledge, that it predicts that a lot less human discourse should occur than actually occurs. There are many situations in which discourse is produced where the intended audience can be expected, but not guaranteed, to have stereotypic knowledge of what is to be communicated.

In spite of these unresolved issues, it is perhaps significant that at least some of the writers who have raised these issues seem to come down on the side of going along with frame-theory as in working hypothesis. Brown and Yule note that frame theory "has provided a useful working model for analysts" (1983:241). Bower, Black and Turner, whose reservations have been noted above, have brought forward substantive empirical

evidence for frame-theory. They have worked out "empirical scripts norms" at three agreement levels. Their subjects largely agreed on the scripts in terms of characters, props, actions and the order of the actions. Subjects tended to confuse stated actions with unstated actions implied by the script. Subjects recalled script actions in their familiar order rather than the given order.

So the empirical support for frame theory accumulates, but is probably in the nature of the subject that it can never be conclusive, and there are still many puzzling aspects to it. What one can say is that both frame-theory and the "dynamic model-building" theory (if we can call it that) emphasise the co-operative nature of the comprehension process.

1.10 Text Organisation. Having looked at approaches to language comprehension which attempt to show how knowledge from outside the text is related to text-comprehension, let us now turn the examination of what some investigators in this area have to say about text organisation (text structure) and how this relates to the process of language comprehension.

1.11 Macroprocessing. Let us begin by taking up on a topic that was briefly touched upon in section 2.4 of the previous chapter. This concerns the influential work that has been done in this area by Kintsch and van Dijk in terms of what they call Macroprocessing. A very useful account of their approach is given in a major article written by these two authors for the

Psychological Review entitled "Toward a Model of Text Comprehension and Production" (Kintsch and van Dijk, 1978; see also van Dijk's book on Macrostructures, 1980), and an attempt will be made to summarise their position as presented in that article here.

Kintsch and van Dijk see the process of text comprehension as involving three sets of operations (1978:363):

Stage 1: the meaning elements of a text become organised into a coherent whole, a process that results in the multiple processing of some elements with the result that some elements of the text are remembered more readily than others.

Stage 2. A second set of operations condenses the full meaning of the text into its gist.

Stage 3. A third set of operations generates new texts from the "memorial consequences" of the comprehension (i.e. the various kinds of memory traces engendered by the processes previously mentioned).

As a modus operandi, Kintsch and van Dijk assume that underlying any text is a set of "semantic structures" which they characterize as propositions. This is an important (and, as we shall see, controversial) decision. The model does not attempt to explain how these propositions are inferred. They stress that their model applies to all comprehension, both

reading and listening.

The semantic structure is characterised at two levels. First, there is the level of the individual propositions ("micropropositions") and their relations, which the authors call the microstructure. Then, there is a level which is of a more global nature and characterizes the discourse as a whole, which they call the macrostructure. These two levels are related by a set of specific "semantic mapping rules", which they call macrorules.

The macrorules are as follows (with the present writer's gloss - the original tends sometimes to be opaque and jargon-ridden):

1. Deletion. Any proposition that does not serve to interpret a subsequent proposition may be deleted.
2. Generalisation. A sequence of propositions may be replaced by a general proposition.
3. Construction. A sequence of propositions may be replaced by a proposition which denotes a "global fact", of which the microstructure propositions are normally conditions, components or consequences.

Kintsch and van Dijk assume that the text is processed in cycles, each cycle being limited by the capacity of the short-term memory: "Part of the working memory is a short-term

memory buffer of limited size s. When a chunk of  $n_i$  propositions is processed, s of them are selected and stored in the buffer." The higher-level propositions (macropropositions) will obviously undergo this process more frequently, and therefore be more likely to be readily remembered.

To give the reader a flavour of the authors' propositional analysis procedure, we may take the first sentence from a text which is analyzed at length in the article mentioned:

"A series of violent, bloody encounters between police and Black Panthers Party members punctuated the early summer days of 1969."

Kintsch and van Dijk analyse this sentence into seven propositions, thus:

- p1. (SERIES, ENCOUNTER)
- p2. (VIOLENT, ENCOUNTER)
- p3. (BLOODY, ENCOUNTER)
- p4. (BETWEEN, ENCOUNTER, POLICE, BLACK, PANTHER)
- p5. (TIME: IN, ENCOUNTER, SUMMER)
- p6. (EARLY, SUMMER)
- p7. (TIME: IN, SUMMER, 1969)

The analysis for the whole text results in a "coherence graph"; in this particular example, p4. emerges as the most dominant macroproposition: in the graph it is enclosed by the largest

number of boxes - four boxes - indicating that "it was maintained during four processing cycles after its own input cycle" (p.380).

There are many other interesting aspects of this procedure which are given in the article, but it is hoped that sufficient information has been given here to indicate the general thrust of this approach.

- 1.12 Macroprocessing: empirical support. It has already been noted that this explanation of text-processing has been found intriguing by a number of investigators, and consequently a significant amount of experimentation has taken place using this approach. In the article discussed in the previous section, Kintsch and van Dijk have analysed summary protocols produced by experimental subjects immediately, and after a gap of one month and three months in terms of the "microrules" and macro/micropropositions. They discovered, among other things, that the forgetting rates for micropropositions appeared to be about four times greater than that for macropropositions (p.387). Gail McKoon (1977) describes an experiment to test whether "the memory representation of a text is a hierarchical structure". She discovered that sentences which tested topic information were verified faster and more accurately than sentences which tested detailed information: these differences were significant when testing was delayed but not immediately. McKoon therefore postulates two kinds of memory representation: a memory for surface form which does not reflect the importance



of information but which decays quite quickly, and longer term memory which is based on the hierarchical organisation of the text. Guindon and Kintsch (1984) used word-recognition tests related contrastively to microstructures and macrostructures. (This was to get away from experimentation relying on summary writing) it was found that words from macrostructures were recognised more quickly. It was concluded from this "that subjects form macrostructures during reading as an integral component of the comprehension process, and not just in response to task demands." Similar results were obtained by Lorch, Lorch and Mathews (1985) and underpinned their rejection of the "lazy" macroprocessor model (i.e. rejection of the hypothesis that readers process a text's topic structure only when they have to): their findings have been briefly discussed previously in Chapter 2, Section 2.4.

- 1.13 Macroprocessing theory: reservations. In spite of these findings, and the interest it has accrued, serious reservations have been expressed about microprocessing theory, notably in Brown and Yule (1983). They point out (p107) the ambiguity of the term proposition itself: does it have the context-independent, invariant meaning it has in logic, or is it a "one-off" interpretation of a text sentence in context? Further, they note that (p.110): "Neither the topic representation nor the semantic representation of the whole text derive from anything more formal than the analyst's interpretation of what the text means." They also emphasise the linguistic importance of context in understanding different

texts which may be superficially similar or even identical and point out that (pp. 115,116): "The discourse analyst who wishes to present his analysis in propositional terms should realise, therefore, that his analysis represents not a straight translation from sentence meaning into an alternative format, but an interpretation of the speaker's/writer's intended meaning in producing the discourse." (My emphasis).

- 1.14 Importance of Levels. The main criticism of the use of a propositional base for text-processing is that its apparent objectivity is in fact spurious and intuitive. This does not necessarily invalidate, however, the theory that some form of "macroprocessing" is going on, albeit not in the programmatic way that Kintsch and van Dijk have hypothesized. There is enough empirical evidence to suggest that "comprehenders" are actively engaged in the extraction of gist from a text, which must involve sorting out "higher order" from "lower order" information. This has long been established in terms of retrieval (Bartlett 1932), and if Lorch, Lorch and Mathew's (1985) paper is correct it is also an "on-line" activity. It would seem likely, nevertheless, in view of all that has been said in the present chapter, that the assignment of level will be not uninfluenced by the schemata which the comprehender brings to the text. Indeed, the comprehender's schema may on occasion over-ride the intended message of the text (Meyer 1977:332): "Evidence from the Meyer and Freedle (1976) study points out that when the top-level structure of the writer of a passage contains a message contrary to the reader's belief he

will not use the writer's schema, but will provide his own different schema for processing the ideas of the passage in order to process them for memory and subsequent recall."

- 1.15 Text Organisation: Metacognitive Schemata. So, we come back then once more to the idea of schemata but now at a higher level than we have discussed so far: what (if anything) is it that the reader or listener brings to a text in terms of expectations concerning text organisation? We are now in the area of what de Beaugrande and Dressler (1981) call intertextuality, which they define in this way (p.10): "...INTERTEXTUALITY... concerns the factors which make the utilization of one text dependent upon the knowledge of one or more previously encountered texts ... Intertextuality is, in a general fashion, responsible for the evolution of TEXT TYPES as classes of texts with typical patterns of characteristics." They admit that establishing a typology of texts is problematic, and talk in terms of "dominances" (p.184) rather than strict categorization. The categories which they attempt to characterize include Descriptive Texts (concerned with objects or situations), Narrative Texts (concerned with actions and events) and Argumentative Texts (concerned with beliefs or ideas). Interestingly enough, they do not allude to Expository Texts, a category often referred to in text literature and of which their own book is a clear example!

- 1.16 Story Grammars. The effect of de Beaugrande's and Dressler's concept of intertextuality, therefore, is to expand the scope

of comprehender-schemata to include not just "world-knowledge", but a specific kind of "text-knowledge" with consequent expectations. We would expect such text-knowledge to be most accessible with regard to narratives, which are the earliest kind of texts that most of us are exposed to. Simple or traditional narratives such as children's stories or folk-tales tend to be especially formulaic, to the extent that some investigators claim that they can be explained in terms of "story-grammars", by analogy with conventional sentence-grammars. Thorndyke (1977) does this using the conventions of TG. Thus: Story -> setting + Theme + Plot + Resolution; Setting -> Characters + Location + Time; Plot -> Episode\* (\*possibly more than one); and so on. Thorndyke then uses this kind of analysis to devise a kind of propositional hierarchy that is reminiscent of Kintsch and van Dijk's "macropropositions" and subject to similar objections. However, it does seem to be undeniable that story-schemata provide frames which aid recall, which is particularly important both for pre-literate children and for oral cultures. In reading, moreover, evidence has been presented by Haberlandt, Berian and Sandson (1980) to show that reading time patterns reveal greater processing time at the boundary-modes of episodes than elsewhere in the given text. If it is assumed that the reader has a heavier processing load at the boundary of an episode (for obvious reasons), then this finding would seem to confirm the psychological validity of the episode as a unit of narrative on-line processing. An interesting paper by Kintsch and Greene (1978) demonstrates that story-schemata are

culture-specific.

- 1.17 Reader Strategies and Text Organisation. Granted that text-schemata exist, how is it that readers (or listeners) use them in their encounters with texts? In attempting to answer this question we turn to another investigator who had made a major contribution the explanation of this area: Bonnie J F Meyer.

In Meyer and Rice (1982) a model is proposed for the interaction between reader and text. The authors begin at the point that has just been established here (p.155): "A text can be written with various sorts of organisations and a reader can likewise approach a text with various organisational expectations."

Similarly, they assume what has been proposed here previously, namely that a text follows a "hierarchy of content in which some facts (statements etc.) are superordinate or subordinate to others." The authors then present a rationale of comprehension which is crucial to the present work (p.156): "Due to readers' limited capacity to remember everything in a text and their need to selectively forget some information from both short-term and long-term memory, writers must cue readers into viewing some information as more important to remember than other information. The use of writing plans ..... accomplishes this goal. Writing plans cue readers into the writers' perspective by the way they structure topic content

and the emphasis they place on certain aspects of this content... The readers' task, then, is to construct a cognitive representation of the text which is similar to that intended by the writer. The comprehension process will involve an active effort to discover the texts major logical relationships and the information expressed in these relations. Different types of organizational plans affect expectations differentially during reading as well as search plans during retrieval." (My emphasis).

After referring to a number of classifications of the types of logical relations which operate in a text, the authors propose five basic rhetorical relationships ("organizational plans"):

1. collection relation "which shows how ideas or events are related together forming a group";
2. causal relation;
3. response (problem/solution, remark/reply, question/answer);
4. comparison;
5. description

They then suggest that writers reveal their perspectives on a topic by

1. organizational plans (as above);
2. sequencing (of words/sentences/paragraphs)
3. "adjunct techniques" namely:
  - signalling
  - illustrations
  - questions
  - objectives (see Meyer 1981)

Four types of signalling were identified by Meyer (1975):

1. explicit statement of the structure;
2. preview statements (prematurely revealing later content);
3. summary statements; and
4. pointer devices such as: "an important point is",  
underlining, italics and similar techniques.

The reader's understanding will be successful to the extent that information which is high in the author's organisation will also be high in the reader's construction of the text. Meyer and Rice (1982:162) cite various sources which present evidence that "skilled readers appear to approach text with knowledge about how texts are conventionally organised and a



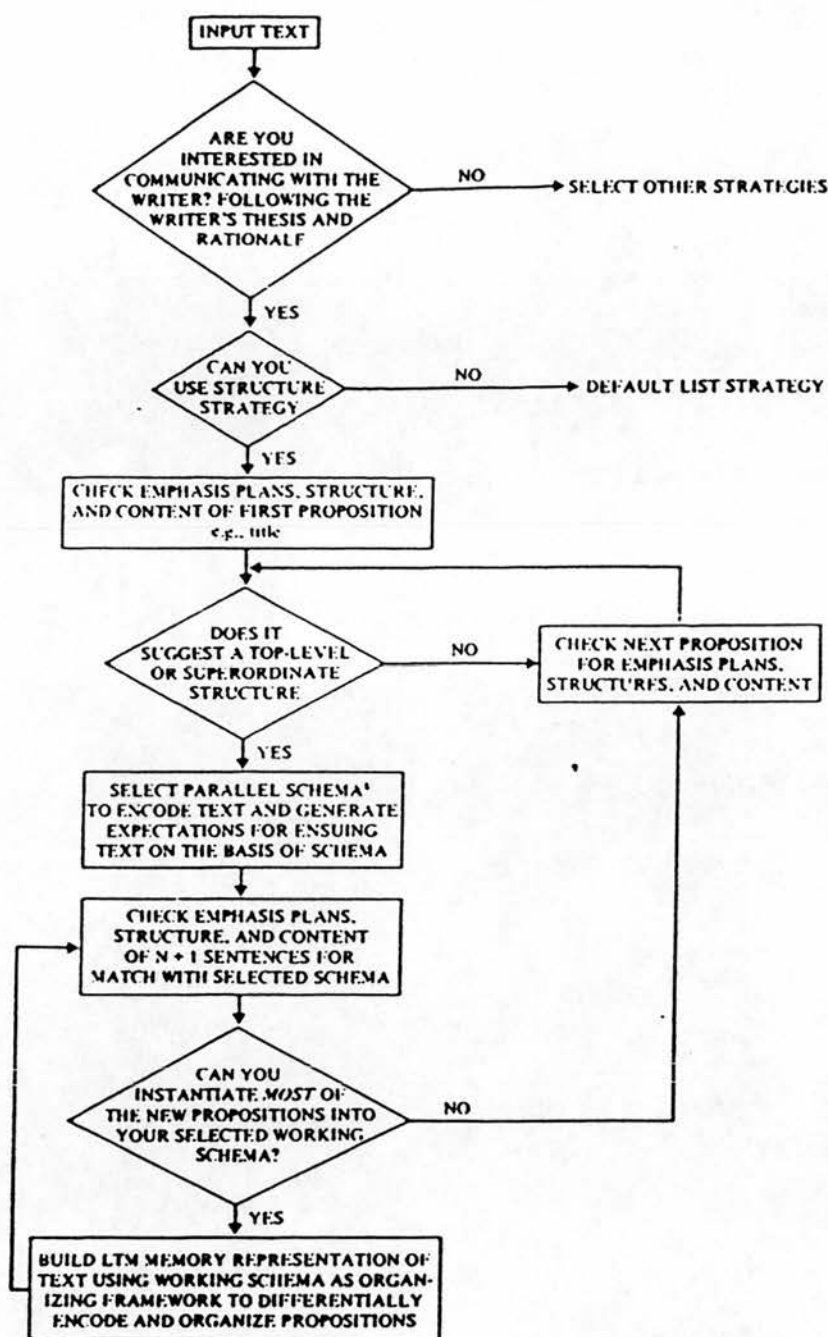
strategy to seek and use the top level in a particular text as a organizational framework to guide encoding and retrieval."

(My emphasis). Meyer and Rice call this the "structure strategy". Building on this, Meyer and Rice present an algorithmic model for processing (expository) texts (see figure 3.1).

It is to be noted that Meyer and Rice use terms taken from Kintsch and van Dijk such as "macropropositions", but there seems to be no attempt to give these propositions the pseudo-objectivity that Kintsch gives them: it is clear that these are interpretative categories, dependent at least partly upon the skill of the reader. The crunch question is to what extent they match the writer's macropropositions.

Readers who cannot use the structure strategy as outlined above are said to be using the "default list strategy" (Meyer and Rice 1982). (This possibility is noted in the diagram in Figure 3.1). The authors define this strategy as follows (p.166):

"While the structure strategy is a systematic plan for processing text, the default strategy is not. The reader has no plan and simply tries to remember something from the text. About 50% of a sample of ninth graders [i.e. about 15 years old: roughly in the target age range of the present work] exhibited this reading behaviour (Meyer, Brandt and Bluth, 1980). Most of these ninth graders had poor reading comprehension skills,



<sup>1</sup> Type of schema selected here influences processes of selection and buffer rehearsal.

Figure 3.1 Model for getting text information into organized schemata in memory

Meyer and Rice(1982)

while good comprehenders exhibited the structure strategy evidenced by large levels of effect and use of the same top level structure in their recall protocol as found in the text. Thus readers with the default strategy lack an organisational plan, a crucial variable in verbal tasks..."

The evidential section of Meyer and Rice's paper describes some ingenious experimentation using texts in which the organizational patterns and signalling are varied in five different ways while keeping constant other key features such as the number of concepts, the order of concepts, and the degree of repetition of arguments. This produced some texts which were much more helpfully structured than others. It was found that good readers were able to exploit helpful structuring in the processing and recall of the texts, while poor readers failed to take advantage of the helpful structuring, even when explicit clues were provided. In other words, they applied the same default list strategy to every text.

Using a technique similar to that used by Olson, Mack and Duffy (Poetics, 1981), Meyer and Rice asked the subjects to go through the passage sentence by sentence and (inter alia) make predictions about what they expected to come next, whether their previous expectations had been confirmed, modified or changed and how they expected the whole passage to be organized. The sample protocols given are extremely interesting and show considerable sophistication on these

reader's part on their interaction with the text (and, through the text, with the author).

(The present writer replicated this procedure with a group of 15 Malaysian first year degree students studying in UK, and discovered similar sophistication in predictions and organisational expectations on the part of some of the students and a much lesser degree of sophistication on the part of others. There are clearly interesting implications in this for differential study achievement and possible study improvement through the acquisition of organizational plans for reading; but it is, unfortunately, not appropriate to discuss this particular issue further here).

## 2. Applications

2.1 What are the applications of the approaches and the research findings which have been surveyed in this chapter and the previous one? Have these approaches/findings been applied to teaching situations and is there any empirical evidence for the success or failure of such applications? It is to the consideration of these questions that we now turn.

2.2 Use of Advance Organisers. The first application that we will discuss here is related to the knowledge when the reader brings to a text. Probably the most influential and best researched applied psychological theory in this area is David P Ausubel's assimilation theory (Ausubel, 1968). The essence of

assimilation theory may be summarised thus (Ausubel, 1960:271):  
...learning and retention of unfamiliar but meaningful verbal material could be facilitated by advance introduction of relevant subsuming concepts." These "subsuming concepts" which are to be introduced before the text which they refer to is read he calls "Advance Organisers" (AOs).

In an article published in 1979, Richard E Mayer reviewed 44 research studies on AOs which had been done since the 1960 paper by Ausubel, just referred to above. After a careful examination of this "mass of data" and "many conflicting claims", Mayer comes to this conclusion (1979:160, 161): "Twenty years of research in advance organisers has clearly shown that advance organisers can affect learning and that the conditions under which organisers are most likely to affect learning can be specified."

One of Mayer's interesting findings is that AOs more strongly aided "inexperienced learners" (p.161). He notes (p.162) some latitude in interpreting what an AO actually is; the important thing is that it should provide "an organized conceptual framework that is meaningful to the learner." Among other things, he emphasises the effectiveness of sets of "higher order rules" and discussions of "main themes" as opposed to AOs which emphasise specifics. This is in keeping with what we have already discussed concerning text schemata.

This is borne out by a paper by Stephen C Wilhite (1983)

entitled "Pre-passage Questions: the influence of Structural Importance." Wilhite details experiments which he did with university students. The results indicated that when "high level" pre-reading questions were asked, the students recalled more of these parts of the passage not the subject of the questions (which he terms "indirect recall") than if "low-level" questions are asked or if no questions were asked. Perhaps predictably, the high-level questions facilitated also "the encoding of the central organizational idea within the passage segment." Interestingly, Wilhite's findings fit in with Mayer's review findings, in that the less able student benefitted most from this kind of adjunct questioning: presumably more able pupils are more capable of devising their own effective text schemata.

- 2.3 Comprehension Training and Metacognitive Awareness. A vast amount of research has been done in investigating the effectiveness of comprehension training and the development of metacognitive awareness in the promotion of reading skills. An informative and authoritative review of this work has been done by Pearson and Gallagher (1983) - P David Pearson himself has done much significant research in this area.

Near the beginning of the Pearson and Gallagher paper (p. 320), they note a very interesting, and indeed astonishing, finding from the work of Durkin (1978/79). Durkin and her colleagues made a study of how some 40 intermediate grade teachers tackled the teaching of reading comprehension. They observed reading

lessons, and also some social studies lessons, throughout a school year for a total of 17,997 minutes (i.e. a few minutes less than 300 hours). Out of virtually 300 hours of this reading lesson time Durkin found that fewer than 50 minutes (.25%) contained any actual comprehension instruction! The most common activity was assessment, followed by assigned worksheets. Durkin (1981) made a complementary finding when she turned to teacher's manuals. Most of the space was given over to assessment and organising worksheets. In other words, the teachers were actually doing what they were being instructed to do i.e. teaching the skills of comprehension "by implication." As Pearson and Gallagher put it (p. 321): "The hope, apparently, is that eventually students will get the message on their own."

Coming onto their survey of research into, and teaching programmes on comprehension instruction, Pearson and Gallagher point out that it is very difficult to sort out metacognitive awareness from comprehension instruction since most researchers feel that they have to train students to perform a strategy before they can ask them to monitor its application (1983:329). They then proceed to describe several investigations which find that various kinds of intervention can produce statistically significant improvements in learners' reading comprehension. Among these successful strategies were: (1) training students to recognize common "writer's plans" or "text frames" e.g. cause/effect, problem/solution etc. (Bartlett, 1978): (2) training students to relate superordinate to subordinate



information (Taylor, 1982); (3) training students in "mapping" strategies, i.e. selecting key information from an expository passage and representing it in some sort of visual display (boxes, circles etc.) (Armbruster, 1979; Geva, 1983); (4) by using predictions and getting students to develop inferential skills, and compare their predictions with what the writer actually said (Hansen, 1981). Less able students benefitted most from this treatment.

Pearson and Gallagher note that evidence supports that the comprehension instruction should be explicit, principled and systematic: it is not simply a matter of increasing the amount of time given to comprehension instruction as Durkin's work might have suggested (Pearson and Gallagher, 1983: 335-337). If there is no such programme in secondary schools, then there is a real danger that the "rich get richer and the poor get poorer" (1983:337), since it is consistently the less able readers who benefit most from intervention.

Pearson and Gallagher's (1983) findings are buttressed by subsequent but less comprehensive research reviews, e.g. Kent (1984), Horowitz (1985), and Shannon (1985).

### 3. Language Comprehension: Reading and Listening

3.1 In this chapter, we have noted many important findings on language comprehension, and an attempt will be made in the next section to summarise the most salient of these as they relate

to the present work. The objection might be raised, however, that most of these data and findings relate to reading comprehension rather than listening comprehension, and this will readily be admitted. For a variety of reasons (including convenience of data acquisition, more varied publication outlets, and educational preoccupation with reading), research into "top-down" processes and their methodological implications, such as we have been mostly concerned with here, has mostly been done in the area of reading. It might further be argued that this research is therefore irrelevant to the present enquiry. This will not be accepted.

In the heyday of structural linguistics (i.e. roughly from the 1930s to the 1960s), the fashion was to emphasise the differences between spoken and written language. This differentiation almost became discrimination in the pejorative sense of that word. We have seen in the second chapter of the present thesis that language above sentence level was virtually ignored. A similar fate befell written language. In Gleason's standard work on Descriptive Linguistics (1961), for example, written language makes a diffident entrance on page 408 and is ushered off stage about thirty pages later; and Gleason begins this section of his book by noting that "Written communication must be sharply distinguished from spoken" (1961:408).

3.2 More recent writers have presented a different emphasis. For example after describing some interesting experiments comparing speeded reading and listening comprehension, Hausfeld

(1981:317) comes to this conclusion: "Overall, the present results emphasize the similarity of language processing required by reading and by listening. The similarity of reading and listening comprehension reflects the fact that the two tasks involve similar syntactic and semantic processes. These processes are central to comprehension..."

Kintsch and Kozminsky (1977) analyzed college students story recall summaries and concluded that a "common core of comprehension processes... underlies both listening and skilled reading" (p. 491). Kintsch and van Dijk (1978:364) note that "... the main differences between reading and listening occur at levels lower than the ones we are concerned with..." (It is perhaps worth noting at this point that all the studies referred to in the present section refer to native speakers, not foreign learners. To what extent the two modes involve process differences for the latter is, of course, an interesting and important question, but is not relevant here).

The investigator who has done most work in the area of comparing learning by reading and learning by listening is perhaps Thomas G Sticht. In an article entitled "Learning by Listening" (Sticht, 1972), he discusses listener's comprehension in relation to a large scale research project, funded by the American Army, on the effective training of Army personnel. He notes that (p. 295): "It is clear then that, inasmuch as listening and reading both offer in-roads to comprehension by language, the major factor of concern is comprehension by

language... Furthermore, it is to be desired and expected that with readers beyond the learning to decode-read stage, learning by listening and learning by reading should be highly correlated..."

This finding is confirmed in Sticht (1984) using a different kind of database. It will be noted that Sticht uses the term "auding" which corresponds to "listening", as "reading" corresponds to "seeing" (we have briefly discussed this distinction previously: see Chapter 1, Section 4.6). His hypothesis in this article is as follows (1984:144): "If... there are limits on how quickly we can recode speech into language, and language into conceptualizations during auding, and if... reading utilizes the same languageing and conceptualizing processes as used during auding, then we expect that maximal auding and reading rates will be comparable..." The reader may be somewhat surprised at this hypothesis, in view of the very high speeds advertised for "speed-reading" courses, but Sticht makes a distinction between reading and skimming/scanning i.e. selective or partial reading. Sticht concentrates on normal reading and auding rates and refers to extensive research using time compressed speech to accelerate spoken word rates to as fast as 500 w.p.m. with little signal distortion. "Using this approach, it has been found that both auding and reading comprehension rates for college level readers are optimal at around 300 words per minute." (1984:148). Sticht also cites and details various other research findings which support his hypothesis.

If there is so much similarity and overlap in the two kinds of comprehension, is it necessary to teach listening comprehension separately? Since Sticht has done as much as anyone to emphasise the overlap, perhaps he is the best person to answer this question (1972:297): "Thus, the main thrust of this discussion is not to discourage training in learning by listening within any population. On the contrary, the point is that it is neither necessary nor particularly desirable to produce criterion tests for such training that produce test scores which are independent of other (e.g. reading) test results for the same types of cognitive tasks. To justify instruction in learning by listening it is sufficient that instructional objectives be specified and agreed upon, that a student's ability to accomplish the objective be assessed, and to note whether or not the student can perform the objective."

Clearly, there are many important differences between the reading and listening mode (see Brown (1977) for a detailed specification of the characteristics of listening to spoken English, and Wallace (1982) for a general review of similarities and differences). Equally clearly, the two modes are complementary and not distinct, and particularly so at the higher levels in the area of the "transactional long turn" with which the present work is concerned (see above, Chapter 1, sections 4.7 and 4.8).

### 3.3 SED Project on Listening Comprehension

3.3.1 Support for the point of view just presented (i.e. the complementarity of spoken and written comprehension) was provided by the Scottish Education Department's Project on Listening Comprehension (1982-85). The present writer was a member of the research team for this Project which was under the direction of Professor Gillian Brown. The other members of the team were Anne Anderson, Nigel Shadbolt and Tony Lynch, whose attachment to the Project (like the present writer's) was concerned with the production and trialling of Project-related teaching materials. The central strand of the Project was "to investigate conditions of input which make it easier for students to understand the language which is addressed to them" (Brown et al 1983-85: April 1984, Section 1, page 1.)

3.3.2 At the start of the school Autumn term, 1983, the investigators made a data-gathering visit to Wester Hailes Education Centre, a large comprehensive secondary school in Edinburgh. Three experiments were conducted involving 44 pupils and a total of 748 individual task performances. The first experiment involved expository inputs and the two others narrative and static description respectively; it is therefore the first experiment which will be briefly described here. (For a fuller account of this experiment, see the Report referred to in the previous paragraph, Section 3, pages 1-47).

3.3.3 This experiment was concerned with the ability of listeners in



the target group (Scottish secondary pupils) to recall and summarise short informative passages. It was intended to some extent to complement the work done by Brown and Day (1983) with subjects ranging from 10 year olds to Postgraduate students of English, but of course with written inputs. A second aim of the experiment was to investigate how flexible listeners were in responding to the demands of various tasks. (For account of what follows, see Project Report, April 1984:Section 2.1).

3.3.4 Input passages were designed which had various ways in which the information they contained was structured.

Three features of the passages were implemented:

- (1) the presence of an informative title versus an uninformative title;
- (2) the presence of a category name preceding a list of members of the category versus a short list of examples of a category;
- (3) a main point of information followed by several examples or illustrations of this point versus a list of illustrations preceding the point of information they are intended to exemplify.

In order to minimise the memory burden, inputs were kept short (20-30 seconds). An example of one of the "helpfully-structured" inputs is given below:



### Computers in the office (1)

Computers are used (2a) in many businesses (3a) banks, insurance companies, building societies and accountancy firms (4a).

Computers can store (2b) large amounts of information (3b) such as staff wages, expenses and outstanding bills (4b).

In the future (2c) most people will use computers (3c) from the managing director, to the sales manager to the most junior clerk (4c).

It will be seen that this input has:

(1) A "helpful" title (Computers in the Office). An example of an "unhelpful" title would be "A big change", which tells the listener nothing specific.

(2) Category names such as "businesses" (3a) and "information" (3b) come before examples of those categories (4a and 4b respectively.)

(3) Main points of information (2a and 3a, 2b and 3b, 2c and 3c) precede their exemplification.

3.3.5 Procedure. The pupils were recorded in pairs. In the recall task the pupils were told, for example: "You are going to hear

a short passage on the headphones. Listen to it carefully. Then tell your partner ALL about what was in the passage. He has a question to answer and he can only do this if you tell him everything in the passage." The pupils were instructed for the summarizing task in this way: "You are going to hear one of the passages you heard earlier again. Listen to it very carefully. This time you have to tell your partner a VERY SHORT VERSION or summary of the passage, with only the MOST IMPORTANT things in it. Imagine if you were going to write this down it would only be 2 or 3 lines long. Remember keep it very short with only the most important things in it."

All task performances were transcribed and then scored for the numbers of words used and the number of facts mentioned in the recall and summary tasks.

#### 3.3.6 Findings. Among the findings were the following:

- (1) Helpfully structured passages were recalled significantly better than unhelpfully structured passages. (Since this was the key finding, perhaps the statistical details should be noted: T-test by subjects,  $t_{1, 43} = 3.89$ ,  $p < .05$  and by passages  $t_{1, 11} = 3.51$ ,  $p < .01$ .)
- (2) Informative titles from helpful passages were mentioned more often in recall and summarizing tasks than the uninformative titles from unhelpful passages.

- (3) Examples of categories were mentioned less often in the summarizing task than in the recall task. However, this difference was found to be significant only among the more able pupils.
- (4) Pupils proved to be fairly inflexible in responding to the differential tasks of recall and summary. Pupils produced summaries which contained fewer facts or words than their original recall of passages on fewer than half the tasks in the experiment.
- (5) Although there was a wide range of individual performances, there was little difference between groups of pupils of different academic ability.

3.3.7 Discussion. In general terms, this experiment is important in providing some empirical evidence that the importance of text structure in the comprehension process (which has been one of the main themes of this chapter) applies equally well to the listening mode, and to the context of the target population of the present work.

Secondly, it is disturbing, that secondary pupils, across the range of ability, had difficulty in performing differentially the tasks of recall and summary. As we have already seen, summarizing is an integral aspect of text processing (see sections 1.12 and 1.14 in the present chapter.) The problems which the pupils have encountered have probably to do with the

more demanding, expository nature of the text. In other words, this finding parallels to that of the SED Competence in Spoken English Project (concerned mostly with productive language), as described by Brown, Anderson, Shillcock and Yule (1984), where a contrast was drawn between performance in "listener-related" talk and "information-related" talk (Brown et al, 1984:6-11.) Pupils who could handle the former easily could turn out to have very serious problems indeed with the latter.

#### 4. Summary

In this chapter, we have discussed the top-down approach to the analysis of the process of language comprehension. We have discussed two related aspects of this approach: the importance of the "frames" or "schemata" which readers and listeners use to organise language input, and in particular the importance of such schemata as they affect "text organisation". In this area, we have noted the crucial importance of matching the comprehender's schemata to the writer's organizational plans. We have, further, looked at the effectiveness, as demonstrated in many studies, of instructing students in the use of a variety of techniques to activate comprehender's schemata e.g. advance organisers of various kinds including pre-questions, prediction exercises, the mapping of text structure and so on. Although most of the research data relates to reading we have noted evidence which indicates that, especially at the level we are concerned with, that many of the findings should be applicable to either mode.

This evidence has been supported by further findings from the SED Listening Comprehension Project which is extremely relevant since it applies to the target group (Scottish pupils in the middle years of the secondary school.) These findings confirmed the importance of text-structure in the process of text-comprehension, but also revealed the problems which the target group had in producing summaries of expository materials.

## Chapter 4

### PROJECT-RELATED MATERIALS: GENERAL RATIONALE

Preliminary Note. Where there is a reference in this and the following chapters to "Project" without further specification (as in "Project-related Materials"), the Project referred to is the Listening Comprehension Project (1982-1985), sponsored by the Scottish Education Department.

#### 0. Overview

The purpose of this chapter is to establish a general rationale for the Project-related materials which will be analysed in detail in Chapter 5, and which are fully documented in Appendices A and B. This rationale will be largely based on the findings concerning the nature of language comprehension (and of listening comprehension in particular) in Chapters 2 and 3. It is, therefore, in the nature of a bridging chapter between the more fundamental issues raised earlier and the more applied and specific issues related to the development of a trialling of the Project-related materials.

The chapter falls into three main parts. In the first part, there is a brief survey of the range of options open to the designer of Listening Comprehension materials analysed along two parameters: by input and by task. The range of options is discovered to be very wide and therefore (on the second part)

certain criteria for devising/evaluating materials are adduced. Certain constraints on the devising of the materials are also discussed. In the final section, the criteria are applied to the Project-related materials, and certain other issues relating to the rationale of the materials are discussed.

## 1. Listening Comprehension Materials: Range of Options

1.1 Some years ago, the present writer made a survey of the range of Listening Comprehension teaching materials commercially available at that time. (Wallace 1983.) It was noted that the vast majority of materials commercially available were devoted to the improvement of Listening Comprehension in non-native speakers. Of the materials available for native speakers, nearly all were study skills materials pitched at adult (main university undergraduate) level. Since then, with the notable exception of David Northcroft's Hearsay (Edinburgh: Scottish Curriculum Development Service 1984) the situation has hardly changed with respect to provision of listening comprehension materials for native speaking pupils at secondary school level.

1.2 In the survey just referred to, it was noted that there were two main parameters along which Listening Comprehension materials could vary: (1) with respect to the nature of the input; and (2) with respect to the nature of the task.

1.3 Categorisation of inputs. With respect to the inputs, two further important sub-parameters, as it were, were



distinguished: (1) variations related to the speaker, and (2) variations related to the text. It was noted that there was a reciprocal relationship between these two sub-parameters: obviously a certain type of speaker will tend to be associated with a certain type of text and vice-versa. While it was recognised that categorisations of different kinds of texts and speakers are essentially open-ended, a short check-list was drawn up which teachers might well find useful in categorising available or new materials. It was suggested, for example, that the speaker could be categorised by:

- (a) persona. Is the speaker being himself or is he playing a role?
- (b) number of speakers;
- (c) status. Is the input, for example, from a "model" or from a fellow-student?
- (d) dialect and/or accent;
- (e) style and/or register.

1.4 With regard to the text, it was suggested that teachers might be interested in asking such questions as these:

- (a) What is the level of difficulty of the input and how is difficulty measured? This is an important question which

will be returned to later, when the issue of grading is discussed;

(b) How long is it?

(c) What is its function? Is it interactional (conversational) or transactional? Is it narrative or expository?

(d) What is the occasion? Is it pedagogic, i.e. performed in the context of teaching, or has the utterance been made in the context of some other activity?

(e) What is the degree of spontaneity? Has the text been scripted or not? If unscripted, has the input been "cued" or guided in some way, or is it completely spontaneous? (This has an obvious relation to the persona and status of speakers).

(f) What is the text-type? For example, is it "spoken prose" or "conversation", to use Abercrombie's terms (Abercrombie 1965);

(g) What is the nature of the topic? There are two aspects to this. The first one is the obvious one of what the input is about. The second is in terms of what the present writer has called "text orientation", which is a two-way process. Is the input addressed to a very general audience (e.g. a news bulletin) or to a specific audience? This has

to do with the speaker's relationship with the listener. The converse of this is the listener's orientation to the speaker and/or the input (and this is an area where the reciprocal nature of the text/speaker relationship becomes very prominent.) These might be described as listener-subjective categories: how relevant or irrelevant is the text to the listener's needs or interests? how interesting/uninteresting? how familiar/unfamiliar ... and so on.

### 1.5 Listening Comprehension Tasks

Similarly, it was felt that it might be useful to categorise the various tasks which had been logged in the survey. In the survey, over 90 different tasks were logged, and it seemed to the present writer that the following headings, would be useful in the categorisation of such tasks:

- (a) Source Was the task self-generated or did it come from an outside source (i.e. "external")? Example of a self-generated task would be where a listener writes down a series of questions before listening to a lecture in order to focus his attention on what the lecturer has to say. The taking of notes is another frequent self-generated task. Materials can be designed in such a way as to promote self-generated tasks (especially by using group work). However, in the published materials, all tasks are, in the nature of things, externally sourced;

- (b) Time of intervention. The task can be performed before listening to the input, while listening or after listening - or some combination of all three;
- (c) Scope. The task may be related to a particular aspect of the input (e.g. a matter of detailed information) or may be more concerned with the gist or total impact of the input. This is obviously not an either/or distinction, as there are a variety of tasks of narrower or wider scope;
- (d) Degree of realism. How "realistic" or "natural" is the task? Or is it purely "pedagogic"? Doing an IPA transcription, or indicating stressed syllables on a transcript would be examples of "pedagogic" tasks; taking notes from a lecture in the listener's subject area would be more "realistic".
- (e) Degree of language production. How much language has to be produced in order to perform the task, and how far does the successful performance of the task depend on language production ability? Since language comprehension is an interiorized activity, teaching and testing materials have to arrange for the process to be exteriorized so that progress or achievement can be monitored. This has sometimes led to uncertainty as to what precisely is being monitored. Some materials try to circumvent this by inventing tasks which do not require the production of

language (e.g. matching pictures etc.);

(f) Task-orientation. A dichotomous division may be made here between tasks which are language-oriented and those which are content-oriented. Many Listening Comprehension tasks for non-native speakers are (naturally) language-oriented, and are concerned with the phonology, lexis, or grammar of the target language, or perhaps (more recently) with discourse features. Content-oriented tasks may be of many different kinds. Tasks which intervene before the input (i.e. pre-listening activities) are often concerned with developing some kind of conceptual frame for the listening which will follow. Some tasks are concerned with literal recall; some are specifically geared to developing the listener's inferential powers; some are re-organisational (eg. summary or precis tasks); some ask for the listener's personal reactions to the input; some of these reactions may be evaluative and some may be aesthetic;

(g) Level of difficulty. Although it has been convenient to present this aspect here at the end of the list of suggested categories rather than at the beginning, the difficulty of the task is clearly just as important as the difficulty of the text or input. There are two main areas which relate to the difficulty of the task: (1) the integral difficulty of the task itself, gauged by whatever criteria might be appropriate; and (2) the difficulty of the instructions or rubric related to the task. With

respect to the latter, it is a commonplace of testing procedures, for example, that multiple-choice questions may make fewer demands of the language production abilities of the listener (or reader), but may make greater demands of his or her language comprehension abilities than the text or input itself. Obviously, the same constraints may be found also in exercises designed to develop listening competence, and not only with respect to multiple-choice questions: some published exercises in listening comprehension make demands of map-reading skills of a fairly high order!

## 2. Criteria for devising materials

- 2.1 If one multiplies all the various kinds of possible input by the various kinds of task, even if only along the selected parameters which have been listed here, it is clear that there is a huge variety of possible listening materials - an embarrassment of riches, in fact. The first problem, therefore, which confronts the materials designer is to decide on criteria which will guide him in the devising of appropriate materials. Criteria which were used in the devising of the Project-related materials will therefore be listed and discussed below. In the establishing of this list, the checklist of "criteria for evaluating activities and exercises" devised by Jack C Richards (Richards, 1983:233-4) was found to be a useful point of cross-reference, and reference will therefore be made to it from time to time below. Richards'



list was, of course, devised in the context of English as a Foreign Language but is stated in sufficiently general terms to be relevant to the present discussion.

2.2 Criterion 1: Materials should be "Principled." It will be remembered that this was one of the main criteria specified by Pearson and Gallagher (see Chapter 3 above, Section 2.3, second last paragraph). It is not, however, one of Richards' criteria, although it is implied to a certain degree within his criterion of "content validity." In the present context, the point of this criterion is that materials should relate to what is known about the processes of language comprehension, and listening comprehension in particular. Expressed in Corder's terms (Corder, 1973:156), we are talking about a "third order" application of "theory" to "teaching materials data." Specifically, then, we are saying that the materials should be devised on the basis of principles which are consonant with the research which was the subject of chapters two and three of the present work. It will be clear that the principles that will be advanced will therefore be "sub-criteria" as it were, i.e. criteria which are more highly specific to the research relating to the present area of concern.

2.3 Criterion 2: Materials should be appropriate to the target group. This again is not listed by Richards: perhaps he thought it too obvious to be stated. It is, however, worth separate mention here, since it has been already noted that,



among the wealth of materials produced, nearly everything commercially available has been devised with either foreign or adult learners in mind, and hardly anything directly applicable to the target group of the Listening Comprehension Project (S3/S4 pupils in Scottish secondary schools, across the ability range). This is not to say, of course, that EFL materials, for example, cannot be modified for this target group, and enterprising teachers have done precisely this, albeit in an intuitive and unprogrammatic way. The only work which has been precisely oriented towards this group, as has been previously noted, is David Northcrofts' Hearsay (1984). This is an excellent teacher's book, but it is basically a source book of various ideas and suggestions, to develop oral skills (mostly classroom-trialled) rather than a "principled" approach in terms of Criterion 1; nor is it "graded" in terms of Criterion 4 below.

#### 2.4 Criterion 3: Activities should be purposeful and

transferable. This criterion is taken from Richards (1983:233). Part of his explanation runs like this: "Does the activity reflect a purpose for listening which approximates authentic real-life listening? Do the abilities which the exercise develops transfer to real life listening purposes, or is the learner simply developing the ability to perform classroom exercises?" He notes, for example, that cloze tests which require a listener to supply grammatical words on listening to a news item do not

reflect the purposes for which people normally listen, and therefore have low "transferability", whatever other positive effects they may have on, for example, target language competence.

2.5 Criterion 4: Materials should be graded. The importance of grading oral language materials has been highlighted by Brown and Yule (1983:25-53). Speaking about productive language skills, they make this point (1983:28): "If there are 'easier' types of long turn, and if there are helpful strategies, then a teacher might be able to construct a structured course where a student could learn a simple skill before building on that to achieve a more complex skill. In such a course, it would be clear that a student could 'make progress' rather than simply 'learn another set of things to say'." It is clear from what they say elsewhere in the same book that they would wish to apply the same consideration to receptive oral skills. The materials to be proposed on the chapter which follows should therefore be seen as being exemplars of potential teaching resources for such a course with respect to the listening comprehension of expository inputs. In the present state of knowledge about the development of listening comprehension skills, the development of such graded materials cannot, of course, be a simple or straightforward matter. Hence, the importance of a principled approach, and also of the process of trialling the materials.

2.6 Criterion 5: Inputs should be appropriately "authentic." This is also one of Richards' criteria. He suggests that "While much authentic discourse ... may be too difficult to understand without contextual support, materials should aim for relative authenticity if they are to prepare listeners for real listening."

Richards is clearly thinking of the EFL context here: Native speakers perform "real listening" most of the time! Nevertheless, it seems reasonable to suggest that the input should "resemble natural discourse" as much as possible. This criterion would seem to be complementary to Criterion 3 (purposefulness and transferability.) However, in many instances, there will inevitably be some tension between this criterion and Criterion 4 (materials should be graded), which is no doubt why Richards' has specified "relative" authenticity; and this is in fact the reason for "appropriate" authenticity being specified here.

2.7 Criterion 6: completion of task-protocols should involve as little language production as possible. It has been long recognised that one of the problems of monitoring comprehension ability is that, somehow, the comprehension, being essentially an internalised process, has to be made overt. Very often this has been done by demanding written or spoken responses and then the question arises as to whether the quality of the response is measuring language reception or language production. On the other hand, in the more general context of developing language

skills, a meaningful and controlled context for language production is not a bad thing. The Project materials were designed to achieve both these ends by:

(a) giving scope to oral production (discussion) during group work; but also

(b) endeavouring to ensure that the final output (ie. completion of the task protocols) did not depend too heavily on the production of written language. this was felt to be especially important for materials intended to work across the whole range of ability at S3/S4 level. This had the added benefit, from the point of view of research, of producing two kinds of data: "process" data arising out of group discussion and "objective" data arising out of completed protocols.

## 2.8 Constraints

2.8.1 Finally, in this section, we should note a factor affecting the design of the materials which might more properly be designated "constraints rather than "criteria", since they actually relate to issues of practicality and administrative convenience rather than to any abstract principle.

2.8.2 Constraint (1): Input text must be expository. It was noted in the first chapter (Section 4.8), that texts can be conceived of as falling into the following broad divisions: static

description (eg. description of a room), dynamic description (i.e. following instructions related to a map) narrative (story) and expository (a broad term which includes the more "abstract" uses of language such as explanation, argument and the articulation of a point of view). Purely as a matter of convenience, it was decided that Tony Lynch, (one of the members of the Listening Comprehension Project Team) should be concerned with the production and trialling of materials in the areas of description and narrative (to use the terms designated here): the resulting data were analysed by Anne Anderson. The present writer was concerned with the production and trialling of materials in the area of expository texts, and was also responsible for the analysis of the resulting data. It is therefore only those texts which will be discussed here. (The most accessible account of Tony Lynch's materials and Anne Anderson's analysis of them is to be found in Anderson and Lynch (1988:97-122)).

#### 2.8.3 Constraint (2): Materials and techniques should be "imitable."

The intention was to provide Scottish classroom teachers of English at S3/S4 level with approaches that they could readily and cheaply adapt to their own situations. It was intended therefore that the Project should produce exemplars or "templates" (as it were), rather than a set of published, ready-made materials.

### 3. Application of criteria to design of Project-related materials

3.1 In this section there will be a discussion of how the criteria which have just been listed were implemented in the design of the target materials. The criteria will therefore be taken in the same order and discussed in that context. It will be seen that it is not possible (or even sensible) for the criteria to be considered in isolation, and there will therefore be some degree of cross-reference in what follows between the different criteria.

3.2 Principles. The first principle is related to text-structure or text-organisation. It has been noted how text-organisation has been established by Kintsch and many other investigators as a key factor in the understanding of texts (see Chapter 3 above, Section 1.10 and following.) We have seen how Meyer and Rice (1982) have emphasised the importance of a reader's "organisational expectations" (see Chapter 3 above, Section 1.17). We have noted (*ibid.*) that the "reader's task is to construct a cognitive representation of the text which is similar to that intended by the writer" (Meyer and Rice, 1982:156), which is in turn related to a sensitivity to "organizational plans." Meyer and Rice have shown the importance of this "structure strategy" for processing expository texts. It has also been noted how the general thrust of Meyer and Rice's research was supported by Pearson and Gallagher (1983) when they discovered that successful comprehension strategies included (1) training students to



recognize common "writer's plans" or "text frames", (2) training students to relate superordinate to subordinate information, and (3) training students in "mapping" strategies i.e. linking key information in a text to some sort of visual display (see Chapter 3, Section 2.3 above). Research findings would therefore clearly support teaching materials in which text-organisation is featured and exploited.

- 3.3 A second principle is related to the use of pre-questions. Reference was made in Chapter 3, Section 2.2, to the influential work of Ausubel on assimilation theory. Richard F. Mayer's conclusion with respect to Ausubel's theories was noted, which was that "Twenty years of research in advance organisers has clearly shown that advance organisers can affect learning...." Ausubel's work was presented in Chapter 3 as a corollary of the work on scripts, scenarios and schemata done by a whole host of investigators, notably Minsky, Bartlett, Schank, Sanford and Garrod, and many others (chapter 3, Sections 1.1 to 1.9 passim). More specifically, reference was made to Stephen C Wilhite's findings on the effectiveness of what he called "pre-passage questions", and particularly the way in which high level questions facilitated the encoding of "central organizational ideas" (Wilhite 1983). Wilhite's findings have been supported by many others, notably Hillel Goelman (1982), who showed that, with Grade 4 children, "pre-questions have a selective, or specific facilitating effect" and also "an overall, or general, facilitating effect" (Goelman, 1982:66). The data also indicated the interesting



conclusion that these positive effects occurred with expository texts ("open discourse") irrespective of whether the input was listened to or read, whereas the narrative ("closed discourse") texts could only be inspected selectively when presented visually.

There would thus seem to be a principled basis for the exploitation of pre-questions in the teaching of listening comprehension.

- 3.4 A third principle relates to the phenomenon of in-text prediction in language comprehension. This applies to bottom-up processing as well as to top-down processing. It was noted in chapter 2 that, in describing sentence interpretation the focus has shifted from TG explanations to the idea of parsers, either of a "syntactically-driven" kind or of a "semantically-driven" kind (see Chapter 2, Section 2.14). In Chapter 2 (Section 2.16), it was concluded that "the left-to-right processing assumption with decision-making staging points, and the provision of some kind of storage register which can be the basis for psycholinguistic guessing, all correspond to everyday observation, and what we know of the physiological processes of reading...." (present emphasis). In other words there is good reason to believe that the process of predictive decision-making is to be crucial to successful comprehension, even in bottom-up processing.

In terms of top-down processing, of course, the whole approach

is based on comprehender expectations/predictions. Indeed, we have seen (Chapter 3, Section 1.5) that Brown and Yule (1983:248) define schemata as "organised background knowledge which leads us to expect or predict aspects in our interpretation of discourse" (authors' emphasis). More specifically, we have also seen how Meyer and Rice (1982) demonstrated that competent readers can make sophisticated predictions when taken through a reading text on a sentence-by-sentence basis (see above Chapter 3, Section 1.17). The ability to exploit input cues of various kinds to make sensible predictions is clearly therefore an important first-language comprehension skill.

- 3.5 The fourth principle relates to the importance of gist or summary. We have noted in Chapter 3, Section 1.11 how Kintsch and van Dijk's influential "Macroprocessing" model posits that, in the second stage of the model, the full meaning of the text is condensed into its gist. We have also noted in the same chapter (Section 1.14), that the extraction of gist seems to be an "on-line" activity (Lorch, Lorch and Mathews 1985). The extraction of gist is therefore a natural and necessary process in language comprehension. When it comes to listening to and comprehending expository texts, however, it was discovered by the Project team that most pupils in the target group performed poorly in responding to the differential summary task (see above, Chapter 3, Section 3.3.6). In most cases, this was not because they did not understand the input, but because they could not differentially respond to the task (i.e. giving the

main points rather than simply stating everything they could remember). Since the extraction and articulation of the gist of expository inputs is an important skill in the study of most school subjects, it would seem that it might be worthwhile to look for ways of facilitating this process with respect to Listening Comprehension inputs for the target group.

- 3.6 The fifth principle was that the materials should involve the use of group work. As a result of the Munn-Dunning reforms of the late 1970s and early 1980s (described in Kirk 1982) leading to the new Scottish Standard Grade examination, there was a new impetus towards the development of the use of group work across a range of subjects, including, of course, English. This new impetus resulted in much development work in the use of group work in English in Scottish secondary schools, as evinced by the many titles relating to this topic published by the Scottish Curriculum Development Service, of which Brian Boyd's (1979) Beginning Group Work in S1 and (n.d.) Planning for English in S3-4 are examples. It was natural that both the SED Competence in Spoken English (CSE) Project and the SED Listening Comprehension Project should take this development on board. Indeed, in the CSE project working in groups was found to be one of the most effective ways of improving performance (see Brown et al, 1984:128-135). The present writer has pointed out elsewhere (Wallace 1985a), the usefulness of group work from the point of new developing process-awareness in listening comprehension which many people feel is essential to the improvement of comprehension skills as opposed to the mere

testing of them. With the present materials, it therefore seemed sensible to go along with this trend by as far as possible exploiting the positive aspects of group interaction, and this therefore became one of the principles of the materials design.

- 3.7 Target group. The second criterion was that materials should be appropriate to the target group: in this case S3/S4 (i.e. Form 3/4) pupils in Scottish secondary schools, across the range of ability. It will have been noted that the principles just listed derived from research and experimentation with first-language subjects, and should therefore be appropriate in general terms to this group. An important issue in this respect was the issue of length. In normal classrooms, although there is (as we have seen in Chapter 1) a predominance of teacher-talk, this is not usually for extended periods (unlike the expository inputs in, say, Higher Education institutions). It was therefore decided that the inputs should have an upper limit of about six minutes or so, that being conceived as a reasonable amount of time for a teacher to spend expounding something to a class at this level, without interruption. Also, it should be noted that the average length of inputs for the Scottish Examination Board Standard Grade Listening Examination in English (which all Scottish students currently sit at the end of S4) is between six and eight minutes: it seemed to be sensible that training materials leading up to this examination should be maximally at the lower end of this length of input.

3.8 Purposeful/transferable. The third criterion was that materials should be purposeful and transferable. The point has already been made that normal processes of listening comprehension were involved in establishing the principles underlying the materials, e.g. derivation of gist, use of schemata, advance organisation, prediction, and so on. There would seem to be a priori grounds for assuming the transferability of skills acquired with relation to these principles.

3.9 Grading. We have noted that the issue of grading is crucial. There are two aspects to the grading: the grading of input and the grading of task. With regard to the grading of input, there are many possibilities: by vocabulary level, by syntactic complexity, and so on. Although many such graded comprehension programmes had been devised for both native speakers and foreign learners, it was less easy to see how such linguistic factors could be systematically graded for native speakers at more advanced levels. In view of the Project team's findings concerning the significant effect on comprehension of "helpfully structured" as opposed to "unhelpfully structured" inputs (see Chapter 3, Paragraph 3.3.6), and the importance of text-structure generally in comprehension, it seemed defensible to make the helpfulness or otherwise of text-structure of the inputs the key principle of grading. In terms of grading the tasks, the way forward seemed to be to follow the lead of the comprehension of Spoken English (CSE) Project, and to grade the tasks in terms of the number of

elements in the task and the degree of support given to the pupil doing the task (on grading in the CSE Project, see Brown et al, 1984:64).

- 3.10 Authenticity. The decision to grade the materials gave immediate problems in terms of authenticity. Obviously, it was futile to hope that, by pure serendipity, texts of exactly the right structure for the grading programme could be found: and even if they could be, it would be too much to hope that busy secondary teachers could find similar materials to the exemplars produced by the Project, by the same process, remembering that it was one of the aims of the Project that at least some of the materials should be imitable in their general approach by classroom practitioners. One possibility was that adopted in the basic research on helpfulness/unhelpfulness of text structure previously referred to: namely, inputs that were carefully scripted. We noted in Chapter 1, Section 4.5, that there is nothing "unauthentic" about listening to scripted language, since much, perhaps most, popular broadcast material is of this type, and evidence was brought forward to support this point. However, it was felt that a significant amount of the input should not be scripted, since most instructional expository input is not tied down to a formal script - certainly not in classroom situations. On the other hand, such input is still "transactional" (message-oriented) in Brown's terms rather than "interactional" (listener-oriented) (Brown 1981). Instructional expository input is also usually prepared and structured to some degree. It was therefore felt that, to



correspond to the learners' actual learning situation, some inputs which were unscripted but still controlled were required, and it was therefore decided to use some materials which would be "cued".

The cued materials were handled in two ways. In the first set of materials, the speaker had in front of him an outline of the talk in the form of short headings for main points and less important points. The speaker then spoke to these points and the output was recorded with all the pauses and repetitions etc. as the speaker turned the headings into connected input. In the second set of materials, the speaker spoke from his outline notes to an audience of actual students. This gave greater authenticity, but being less controlled usually meant that more editing had to be done to bring it down to the required input length.

Some of the highest level materials in the second set were "authentic" in the sense that they were not produced for purposes of language pedagogy. These again were of two kinds: either scripted or spontaneous discussion recorded off-air. These inputs obviously had to be edited down to bring them within the target length.

In these ways, therefore, a compromise was attempted between authenticity on the one hand, and on the other, the desire to produce a principled two-track grading in terms of both input and task.



3.11 Application of Criteria to Project-related Materials. The materials will be described in detail in the next chapter, but it will perhaps be useful here to give in outline an account of how the criteria previously listed were applied to the materials.

Two sets of materials were produced ("Cycle 1" and "Cycle 2"). The cycle 1 materials were trialled and then the Cycle 2 materials were produced and trialled. In each cycle, the inputs were graded into three levels ("input levels") in terms of the helpfulness of the text structure (First Principle, 3.2 above).

Within each set of materials three kinds of tasks were devised: pre-question tasks (Second Principle, 3.3 above), prediction tasks (Third Principle, 3.4 above; but also see further comments below) and text-organisation tasks (First Principle, 3.2 above). The tasks were not graded vis-a-vis each other, but within each task-type there were three levels of difficulty. Sometimes one level of input was used across a range of task-levels, and sometimes difficulty of the tasks was kept in lock-step with the materials (see Section 3.6 in the next chapter for details).

With regard to the pre-question tasks, two types of task were experimented with: (a) oral answers and (b) pictorial response, i.e. using pictures (Criterion 6, 2.7 above).

With regard to prediction, two types of prediction were used. The first was in-text prediction of the type that has already been discussed. The second was prediction based on the title. This relates to the idea of the title as a kind of "advance organiser" (Second Principle, 3.3 above). There is substantial empirical evidence for the importance of title in facilitating text-recall. Niegemann (1982), for example, investigated the "Influences of titles on the recall of instructional texts" and discovered that, when two different titles for expository texts were given, subjects recalled more propositions related to the respective title given. It will also be remembered that the Project team had found that, with respect to Listening Comprehension and the target group, informative titles from helpful passages were mentioned more often in recall and summarizing tasks than the uninformative titles from unhelpful passages (see Chapter 3, Section 3.3.6). The exploration of a useful title would therefore seem to be a helpful skill for pupils to develop.

Unless a different procedure was required for experimental purposes, nearly all the responses were filled in on a group basis, after group discussion (Fifth Principle, 3.6 above). Wherever possible, these group discussions were taped and analyzed for insights into process.

Because of the decision to avoid language-production tasks as much as possible, pupils were not asked to produce formal summaries. However, all the tasks (apart from in-text

prediction) were concerned with the extraction of gist in one way or another (Fourth Principle, Section 3.5 above). Thus, in the pre-question tasks, the pre-questions relate to higher-order items in the text-organisation; in the text-organisation tasks, the pupils have to sort more important points from less important points. Once such protocols have been filled in, the process of producing a formal summary should be considerably simplified (for an account of summarising processes and possible applications, see Brown and Day (1983)).

How can "higher-order" items be identified? There are two possibilities. One is to use an "objective" procedure for identifying higher-order items, such as that devised by Kintsch and van Dijk in terms of what they have called "Macroprocessing" (described in Chapter 3, Section 1.11). However, we have also seen that this procedure has been criticised as being in fact intuitive (see Chapter 3, Section 1.13).

Quite apart from procedural problems, there is also the problem that there are two senses of "gist": (a) the listener's summary interpretation of what he/she has heard, and (b) the essence of the speaker's/writer's intended meaning. It is clear that (a) and (b) need not necessarily coincide. Further, we might note that (a) is of psychological interest in itself, but of pedagogical interest only as far as it matches (b). Since it does not seem to be the case that we can deduce gist from the

text by automatic procedures (as Kintsch and van Dijk would have us believe), it therefore seems sensible to concentrate on (b) - the essence of the speaker's intended meaning.

The second possible way of identifying higher order items is therefore, to concentrate by the oral equivalent of what Meyer and Rice (1982) called "writing plans": "The reader's task .... is to construct a cognitive representation of the text which is similar to that intended by the writer (involving) an active effort to discover the text's major logical relationships" (quoted in Chapter 3, Section 1.17).

With regard to the "cued" inputs, the speaker's text-organisation is easily discovered, since by definition it must be the headings of main and less important points which he used as the basis of his input. In other inputs (e.g. those recorded off-air), the text-organisation of the input has to be recovered by the usual procedure of interpretation of the speaker's intended meaning (Brown and Yule, 1983:115,116).

It will be noted in the text-organisation tasks that a diagrammatic layout has been used (see Chapter 5, Section 4.7). This is intended to exploit the point that Pearson and Gallagher (1983) noted in connection with the proven usefulness of training students in "mapping" strategies in selecting key information from an expository passage and representing it in some form of visual display (see Chapter 3, Section 2.3).

#### 4. Summary

In this chapter, we have seen how there exists a very large number of options for designing Listening Comprehension materials, even using only the limited number of categories here discussed. Certain criteria for materials design were therefore adduced, namely: (1) materials should be "principled; (2) materials should be appropriate to the target group; (3) activities should be purposeful and transferable; (4) materials should be graded; (5) inputs should be appropriately "authentic"; and (6) completion of task-protocols should involve as little language-production as possible. Under the first criterion, the "principles" (in effect more partial and specific sub-criteria) related to the issues of: text-structure/text-organisation; pre-questions; in-text prediction; gist/summary; and group-work. Finally, the application of the criteria to the Project-related materials was documented.

## Chapter Five

### PROJECT-RELATED MATERIALS: DESCRIPTION AND TRIALLING

#### 0. Overview

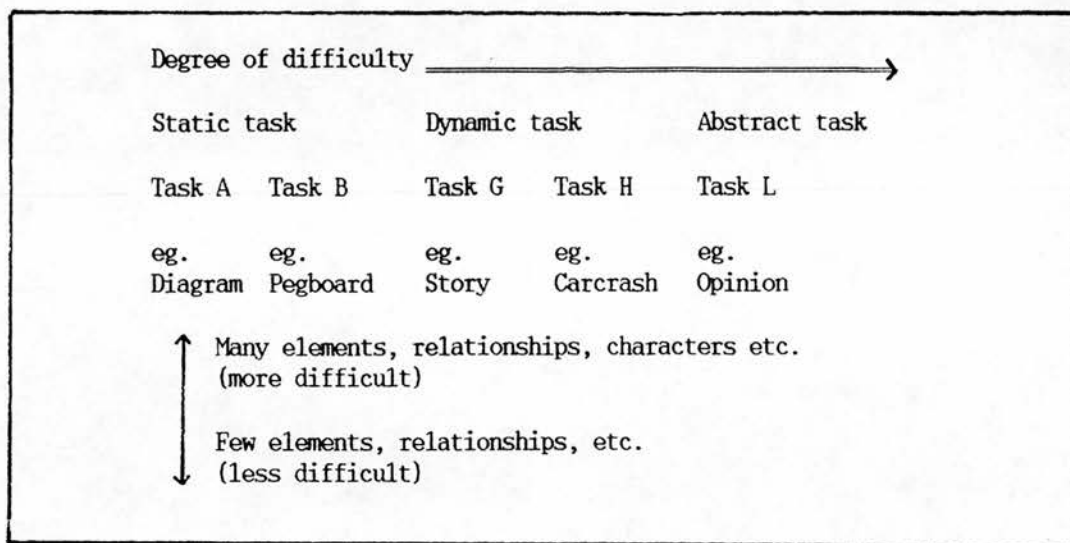
In this chapter, details will be given on the materials which were prepared by the present writer in relation to the SED Listening Comprehension Project. It will be seen that six sets of materials were produced and trialled in two "Cycles": Cycle 1 (Sets 1-3) and cycle 2 (Sets 4-6). There will be four main sections: (1) Background information; (2) Materials development (this is dealt with in terms of (a) inputs and (b) tasks); (3) Trialling of the materials: organisation; and (4) Trialling of the materials: implementation and comments. Conclusions and suggestions for further research/development will be handled in Chapter 6.

#### 1. Background Information

##### 1.1 Six sets of materials were devised and trialled as follows:

- (i) three sets of materials devised and trialled by November 1984 (Appendix A)
- (ii) another three sets of materials which have been devised and trialled by November 1985 (Appendix B).

1.2 The materials were intended to be complementary to the descriptive and narrative devised by Tony Lynch. It was decided that the organisation of the different materials should be in terms of the following diagram from Teaching Talk (Brown, Anderson, Shillcock and Yule 1984, p64).



1.3 It was agreed that Tony Lynch would concentrate on the "Static" and "Dynamic" areas and that the present writer would concentrate on the "Abstract" area (i.e. expository materials). All six sets of materials therefore relate to this area.

1.4 Sets 1-6 will be discussed in greater detail in Section 2 following. In Section 3, the organisation of the trialling will be discussed, and in Section 4, the implementation of the materials with comments. Section 5 contains summary comments.

1.5 Materials: Sets 1-6 These will be described in more detail in the following sections, so only a brief account will be given here.



1.5.1 Selection of inputs. Inputs for these materials were devised/selected on the following basis:

- (i) the inputs would either be "cued", "off-air", or from published cassette materials not specifically designed to develop listening comprehension. The cued materials would take the form of an outline of a few main and subordinate points which the speaker would use as the basis for his input. In this way it was hoped to be able to grade the input in terms of the complexity of its structure (see below) while at the same time achieving a delivery which was more "natural" than scripted speech. The off-air etc. recordings were of two kinds:
  - (a) expository inputs (in some cases certainly, and in other cases probably, scripted),
  - (b) arguments and discussions (unscripted);
- (ii) the inputs would be graded in terms of complexity of structure ("text organisation");
- (iii) they would be fairly short, averaging about 4-5 minutes;
- (iv) there would be some kind of thematic linkage between inputs in each set.

1.8.2 Selection of Tasks. It was decided that there would be an attempt to explore the possibilities of 3 different kinds of tasks:

- (i) Prediction tasks, either related to the title, or in-text prediction from the main body of the input;
- (ii) Text-organisation tasks, where the pupil would be given a task of text-organisation related to some kind of flow-diagram or text organisation outline;
- (iii) Pre-question tasks, where use would be made of advance organisers in the form of information about the questions which the pupil would be asked to respond to. The response would be either the traditional written response, or a "pictorial response" involving the matching of pictures to the questions.

Possibilities of grading within these tasks were also explored.

1.6 A detailed rationale and description of sets 1 - 6 follows in Section 2 and 3 and the conclusions and recommendations from the trialling are listed in Section 4. Perhaps at this stage the findings can be summarised thus:

- (i) it was found that the vast majority of the tasks should be feasible for the target group across the range of

ability;

(ii) the grading of the inputs is reasonably valid (e.g. inputs which were meant to be easier proved to be so);

(iii) the prediction task and pictorial response task in particular were found to be reasonably motivating.

## 2. Materials Development

2.1 Rationale. The general approach for these sets of material was based on developments in the study of language comprehension as previously discussed in Chapters 2, 3 and 4 above. In particular, the following findings and comments arising directly from the Listening Comprehension project are relevant (references are to the various Project reports):

(i) "Helpfully structured passages were recalled better than unhelpfully structured passages" (April 84:39)

(ii) "Informative titles from helpful passages were mentioned more often in recall and summarising tasks than the uninformative titles from unhelpful passages" (April 85:40)

(iii) "This is evidence that some pupils at least .... are trying to be flexible listeners but that they can be aided in deploying this skill by helpfully structured passages" (April 84:45)

(iv) "in these proposed developments from this experiment we have suggested the use of particular pre-presentation questions as a useful tool in developing listening skills" (April 84:46)

(v) "we are concerned with characterising the active nature of the hearer-role. One way in which the hearer may be active is not simply just following what the speaker is saying but in integrating what is being said into a coherent interpretation so fast that the hearer actually predicts, more or less locally, what the speaker is likely to say next" (June 83:15).

2.2 Inputs (Sets 1-3: "First Cycle"). In terms of (i) and (iii) above, the decision was taken to use text structure as a basis for the grading of inputs. (In view of the possible range of interpretations of the word "structure", the term "text organisation" has been preferred). The inputs were correspondingly graded at 3 levels:

(1) Level 1 inputs had an explicit summary at the beginning outlining the main features of the text organisation e.g. "there are basically three types of er computers that I'd like to talk about + em + and they are + firstly main frame computers + secondly er mini-computers + and thirdly microcomputers". The text - structure consisted of three main topics (i.e. in the talk just quoted from, the three types of computers) each one leading into 2

sub-topics, (e.g. two example of uses of main frame computers, and so on).

- (2) Level 2 inputs had no explicit summary at the beginning but there was some forward reference (e.g. "I'd like to start by + talking about + new developments in sending and receiving messages in the home + we can er move into + other + areas later ..."). Also, level 2 inputs had the same systematic organisation, as the level 1 inputs, namely three main topics, each one leading into two sub-topics.

- (3) The level 3 inputs were off air recordings. There was no explicit summary at the beginning, although obviously there was the normal introduction of a topic by a speaker (e.g. in a passage describing how people used natural resources to get the energy they needed, the speaker begins: "We live in a world that needs huge amounts of energy in the form of electricity + which is convenient and easy to use + + + we get this electrical energy from fuels ...". The speaker has introduced his topic, but unlike the level 1 and even the level 2 inputs, he has given no indication of how he is going to develop it). A second characteristic of the Level 3 inputs is that the organisation does not follow the systematic "3 main topic by 2 sub topic" organisation of the lower levels, but varies from input to input. The structure of the level 3 input is also different from the others in that it is

less a matter of simple exposition and more problem - centred. For example, in the set 3 inputs, the speaker states the problem, brings forward solutions, rejects or qualifies the solutions, and returns to the problem again.

- 2.3 It was decided that the more "controlled" inputs at Level 1 and Level 2 should not be scripted but should be done in a more "natural" way. The procedure adopted was to note down in diagrammatic form the main topics and sub-topics of the proposed talk. The notes would look like this example (Set 1):

<u>Main topics</u>	<u>Sub-topics (Uses)</u>
1. Main frame computers	- Working out payrolls - controlling traffic lights
2. Mini-computers	- Forecasting sales - Checking on a patients' health
3. Microcomputers	- Playing games - Learning about computers

The speaker then improvised his talk around these notes, rather as a lecturer might speak to his or her outline notes. It is important to note that the inputs for Sets 1 and 2 were recorded speaking to the tape-recorder, and not to an actual audience.

- 2.4 The third level inputs were recorded off-air from an

educational T.V. programme about the search for energy sources. The whole programme was recorded on videotape and subsequently recorded on audiotape. The inputs were perfectly comprehensible without the visuals, there being only a few passing references to the visual aspect. What did survive on the audiotape were the background sounds (e.g. drilling for coal) which tended to give the talk more impact. The three inputs were taken from sections of the programme in end-on sequence, i.e. each new input beginning where the previous one left off.

2.5 The inputs were all kept short - ranging from 2 mins. 17 secs. to 4 mins. 34 secs. in length, with an average length of 3 mins. 11 secs.

2.6 Inputs (Sets 4-6: "Second Cycle"). Basically the same approach was adopted for these inputs as for the first cycle inputs, with the emphasis on:

2.6.1 pre-structured inputs relating to an outline diagram of main points and subordinate points;

2.6.2 the use of off-air etc. recording for the highest (not prestructured) inputs.

2.7 Although the Second Cycle inputs were intended to be roughly equivalent in level and scope to the First Cycle inputs, there were some differences:



2.7.1 the pre-structured inputs were read by different voices: the Set 4 inputs by a former colleague in the History Department of Moray House, Mr Ian Ferguson; and the Set 5 inputs by Mr Raymond Mackay of the Modern Languages Department of Stevenson College;

2.7.2 to make the pre-structured inputs sound more natural they were taped as they were delivered to an actual audience (the audience for both speakers being a group of 15 Malaysian trainee-teachers currently doing a matriculation course at Stevenson College and Moray House);

2.7.3 because both talks went on too long (for the purposes of the Project!), they were edited down to a shorter length. The length of input as edited down ranged from 3 mins. 40 secs. to 6 mins. 30 secs. The higher figure is mainly due to the very slow delivery adopted by the Set 4 speaker. As can be seen from the transcript (Appendix B) the actual content input for Set 4 was less than for the "shorter" inputs.

2.7.4 the inputs which were not pre-structured (Set 6) were taken from two sources:

(i) two of the recordings were recorded from the BBC Programme Taking Issue with Colin Bell, and subsequently edited to bring them down to the sort of length required;

(ii) the third recording was edited from a 'Psychology Today'

cassette by Tony Buzan called Learning and Memory.

2.8 The general intention of these changes was to make the inputs more lively and motivating than the first 3 sets had been.

2.9 Tasks. It was decided to explore the possibilities of developing three kinds of tasks:

(1) PREDICTION tasks related either to:

(a) the title, or

(b) the text itself ("in-text prediction")

(2) PRE-QUESTION tasks; and

(3) TEXT-ORGANISATION tasks

Each of these will be discussed in turn.

2.10 Prediction Tasks (Title). These tasks relate to comment number (2) quoted in 2.1 above, which pointed out that one of the findings of the Project was the helpful effect that informative titles in recall and summarising processes. It would therefore seem that pupils ought to be encouraged to think carefully about titles and to use them; and that informative nature (or otherwise) of titles could be a principle in grading.

2.11 Prediction Tasks (In Text)

2.11.1 These tasks relate to comment number (5) in 2.1, which noted

that the hearer "actually predicts, more or less locally, what the speaker is likely to say next". This has previously been discussed in terms of general language comprehension research in Chapter 4, Section 3.4 and in Chapter 3, Section 1.17. In the research done by the Listening Comprehension project group, this phenomenon was explored in terms specifically of pronoun reference.

The tentative conclusion of the experiments was as follows (June 1983:24): "the two experiments lead one to speculate that the older, academically successful population have a particularly well-developed sensibility to structured cues. This allows them to construct interpretations likely to match the generative intentions of the speakers."

2.11.2 It was decided to follow this up by devising on-line tasks which would give pupils an opportunity to show what in-text predictions they could make at certain points in the inputs provided, and by this hopefully further develop their sensitivity to various cues. The cues would not be restricted only to the kind of pronoun reference featured in the Listening Comprehension Project research, but would extend across a range of prediction-cues of various kinds.

2.12 Pre-Question Tasks. These tasks relate to comment number (4) in 2.1 in which it was suggested that "pre-presentation questions" (which we shall call "pre-questions") might be useful as a tool in developing listening skills. The role of

pre-questions in language comprehension has been widely investigated, as has been previously noted (see above, Chapter 4, Section 3.10).

2.13 Therefore, there seemed to be a good case for devising materials which involved the use of pre-questions. The pre-questions focussed on the main elements of text organisation as described in 2.3 above.

Two kinds of responses were trialled:

- (a) Using oral responses, and
- (b) Using picture responses ("pictorial response")

The idea of using pictorial responses was to see whether it was possible to devise tasks for an expository input using the kind of picture cues used by Tony Lynch for his narrative materials. If it were possible to devise such tasks, then we might have a type of exercise that could be possibly more appropriate to less able pupils (since writing would not be involved), or across the range of ability simply as another possible kind of exercise, for the sake of variety.

It was also decided with the pre-question tasks to set up a simple pilot experiment to see whether the specification of pre-questions helped experimental groups of pupils to achieve higher average scores in response to "main-point" questions than control groups, who would be asked simply to listen carefully for the main points.

2.14 Text-Organisation Tasks These tasks arose from the finding (as previously mentioned) that pupils recalled helpfully structured passages better than unsuccessfully structured passages. They also produced better summaries of such passages. If we want pupils to be able to get the gist of expository inputs, there would seem to be a case for making them more aware of text-structure, since this is an element of the input that they seem to make unconscious use of anyway. It was decided that the basic approach to task-design in this area would be to use "flow-diagram" type of text analysis, familiar to students of reading from the Open University texts. (On the efficacy of such "mapping devices" see above, Chapter 3, Section 2.3). Three variations on this basic approach were trialled:

- (a) using "stick on" labels
- (b) choosing from a list of options; and
- (c) writing in brief answers.

(It should perhaps be noted that the pre-question tasks (both written and pictorial responses) were also in a way text-organisation tasks, since what the successful pupil ended up with by answering the questions was a summary of the main points of the passage).

2.15 Group Work and Individual Work. Apart from the pre-question tasks referred to in 2.10 above, the intention was that wherever possible the prediction and text-organisation would be performed on a group basis, and the resultant discussions

taped. The implementation of this was patchy mostly (one suspects) because the new members of the team (see below) were not experienced in the process of group taping. Nevertheless 16 separate taped inputs (both class discussion and group discussion) were collected from the classes listed in the schedule of taped materials in Section 3 below, and from these data some suggestions can be made about the usefulness of this kind of activity with respect to the trialled tasks. (Such a mass of data is obviously too bulky to be recorded here in its entirety, so relevant sections of it have been incorporated as appropriate into the text which follows).

### 3. Trialling of the Materials: Organisation

3.1 The materials for Set 1 were distributed to the original group of teachers who had trialled the previous set of materials (i.e. Tony Lynch's materials). This was done at a meeting which took place on 31 August 1984. At this meeting the teachers were taken through the materials and we did, as a simulation, some sample exercises on text organisation.

3.2 The intensification of industrial action in schools during 84/85 had two effects on this area of the Project:

- (i) some teachers had to drop out because it proved impossible for them to continue with the Project while the industrial action continued. In addition, another teacher had to withdraw because of pressure of other

duties. Of the original team, Mrs Helen Dawson (Dalkeith High School) (HD), Mrs Liz Herd (West Calder High School) (LH), and Mrs Pat Robson (St. Mary's Academy, Bathgate) (PR) continued to be involved with the Project;

- (ii) since classes could not be covered by colleagues, it was impossible for teachers to attend meetings in the University like the one which took place on 31 August.

3.3 To try to compensate for those developments, the following action was taken:

- (i) Mr Scott Griffith, Head of the English Department at Liberton High School, was approached to see if he and his staff could be involved with the project. He kindly agreed, and so Mike Falconer, Joyce Fergie and Carrie Woolverton, as well as Scott Griffith himself, trialled some of the materials;
- (ii) all the other contact was done by visits by the present writer to the schools now associated with the Project. This involved 16 visits to the various schools in connection with the trialling. In addition, he was directly involved with piloting or trialling some of the materials at Dalkeith, West Calder and St Mary's Bathgate.



3.4 On 23 May 1985, the present writer was asked to give a talk to the Annual Post-Graduate Conference of the University of Edinburgh Linguistics Department and he chose as his theme 'Prediction exercises as a method of developing "on-line" listening comprehension skills". He used the occasion of the talk to collect some more data from colleagues from the audience with relation to the Set 6 (Level 3) Prediction task that had been devised. This gave him additional data on Post Graduate native speakers and post-graduate level speakers of EFL (analysed below: see Section 4.26 following, and also Appendix C).

3.5 The complete list of materials devised in Sets 1-6 is as follows: (T in end column = trialled data available).

#### First Cycle

##### 3.5.1 Set One (Source: MJW)

General Title: Computers

##### Inputs and Tasks:

<u>Input-Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Levels</u>
1. Level 1 (ie. pre-structured talk, explicitly signalled)	"Types of Computers"	Text organisation	Level 1 (T)
		Prediction (title)	Level 1 (T)
		Pre-questions (oral response)	Level 1 (T)
		Pre-questions (pictorial response)	Level 1 (T)
2. Level 2	"Computers and Jobs"	Text organisation	Level 2 (T)
		Prediction (title)	Level 2 (T)
		Pre-questions (oral response)	Level 2 (T)
		Pre-questions (pictorial response)	Level 2 (T)
3. Level 2	"The Home of the Future"	Text organisation	Level 3 (T)
		Prediction (title)	Level 3 (T)
		Pre-questions (oral response)	Level 3 (T)
		Pre-questions (pictorial response)	Level 3 (T)

### 3.5.2 Set Two (Source: MJW)

General Title: Modern Communications

#### Inputs and Tasks:

<u>Input-Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Levels</u>
1. Level 2 (ie. pre-structured talk, not so explicitly signalled as previous level)	"Sending and Receiving Messages"	Text Organisation Prediction (title) Pre-questions (oral response)	Level 1 (T) Level 1 Level 1
2. Level 2	"Recording and Playing back Sounds"	Text Organisation Prediction (title) Pre-questions (oral response)	Level 2 (T) Level 2 (T) Level 2 (T)
3. Level 2	"How to sleep Through the Olympics without missing the excitement"	Text organisation Prediction (title) Pre-questions (oral response)	Level 3 (T) Level 3 Level 3

### 3.5.3 Set Three (Source: Educational TV Programme on Source of Energy)

General Title: Energy Resources

#### Inputs and Tasks:

<u>Input-Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Levels</u>
1. Level 3 (ie. not pre-structured).	"How people used Natural Resources to get the Energy they needed."	Prediction (In-Text)	Level 1 (T)
2. Level 3	"The Search for Oil Goes on"	Prediction (In-Text)	Level 2 (T)
3. Level 3	"Into the Future"	Prediction (In-Text)	Level 3 (T)

## Second Cycle

### 3.5.4 Set Four (Source: Ian Ferguson)

General Title: The History of English Words

#### Inputs and Tasks:

<u>Input-Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Levels</u>
1. Level 1 (ie. pre-structured, explicitly signalled; slow deliberate delivery)	"Ancestors"	Pre-questions (written response) (experimented)	NA (T)
2. Level 1	"Latin and Greek Words in English"	Text organisation	Level 1 (T)
3. Level 1	"Soldier, sailor, Beggarman, thief"	Prediction (In-Text)	Level 1

### 3.5.5 Set Five (Source: Ray Mackay)

General Title: Aspects of Modern Life

#### Inputs and Tasks

<u>Input Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Level</u>
1. Level 2 (ie. pre-structured, but not so explicitly signalled as previous level; also quicker, less deliberate delivery)	"Top of the Pops"	Pre-questions (written response) (experimented)	NA (T)
2. Level 2	"Baths and showers"	Text Organisation	Level 2 (T)*
3. Level 2	"Computer Games"	Prediction (In-Text)	Level 2 (T)

3.5.6 Set Six (Sources: various, as specified for each input)

General Title: Arguing the Case

Inputs and Tasks:

<u>Input-Level</u>	<u>Title of Input</u>	<u>Task-Type</u>	<u>Task-Levels</u>
1. Level 3 (ie. not pre-structured)	"Is there such a thing as a just War?"	Pre-questions (written response) (experimented)	NA (T)

(Source: Taking Issue with Colin Bell, Radio Scotland)

2. Level 3	"You can Improve Your Memory"	Text Organisation	Level 3 (T)*
------------	-------------------------------	-------------------	--------------

(Source: Psychology Today Cassette by Tony Buzan - "Learning and memory")

3. Level 3	"A Women's Place is in the Home"	Prediction	Level 3 (T)
------------	----------------------------------	------------	-------------

(Source: Taking Issue with Colin Bell, Radio Scotland)

Note: in 3.5.5 (2) and 3.5.6 (2), T\* indicates that the teacher reported the results of trialling, but the raw data were not returned.

3.6 It will be seen from the above that there are two variables: level of input and level of task. In sets 1 and 2, materials were devised for level 1 and level 2 inputs across a range of tasks at all 3 levels of tasks. With set 3, the level 3 inputs

were used for one task only - a new task, namely In-text Prediction. This task was done at 3 levels. With the "Second Cycle" sets (4, 5 and 6) the pattern of trialling was somewhat simplified, in that the input-levels for Text-organisation and Prediction (In-text) went in lock-step with the task levels. Thus, a level 1 input was used with a level 1 task, and so on. Different levels of tasks were not used in the experimental situation for the Pre-questions tasks, since this variable was peripheral to the questions at issue, namely the facilitative effect of pre-questions.

3.7 The complete schedule of trialled materials follows:

Schedule of Trialled Materials (1)

Set No	Task and Level	School	Teacher	Year and Level	No of Pupils
(1) Set 1	Text-organisation Levels 1, 2, 3	St Mary's Bathgate	Pat Robson	S3 Gen.*	19
(2) Set 1	Prediction (Title) Level 2	St Mary's Bathgate	Pat Robson	S4 CSE*	11
(3) Set 1	Pre-questions (Oral response)	St Mary's Bathgate	Pat Robson	S4 CSE	11
(4) Set 1	Pre-questions Levels 1, 2, 3 (Oral response)	Dalkeith H.S.	Helen Dawson	S3 Gen.*	9
(5) Set 1	Pre-questions Levels 1, 2, 3 (Oral response)	Dalkeith H.S.	Helen Dawson	S4 CSE	12
(6) Set 1	Pre-questions Levels 1, 2, 3 (Pictorial response)	Dalkeith H.S.	Helen Dawson Mike Wallace	S3 Gen.	20
(7) Set 1	Prediction (Title) Level 1	West Calder H.S.	Liz Herd	S3 Found.	7

\*Class/group taped discussions available.

Schedule of Trialled Materials (2)

	Set No	Task and Level	School	Teacher	Year and Level	No of Pupils
(8)	Set 2	Pre-question (Oral response) Level 2	St Mary's Bathgate	Pat Robson	S4 CSE	11
(9)	Set 2	Prediction (Title) Level 2	St Mary's Bathgate	Pat Robson	S4 CSE*	11
(10)	Set 2	Text-organisation Level 2	St Mary's Bathgate	Pat Robson	S4 CSE*	11
(11)	Set 2	Text-organisation Levels 1,2,3	St Mary's Bathgate	Pat Robson	S3 General*	11
(12)	Set 3	Prediction (In-Text) Levels 1 and 2	St Mary's Bathgate	Pilot - done by MW with extract group from PR's class	S3 General*	6
(13)	Set 3	Prediction (In-Text) Levels 1,2,3	St Mary's Bathgate	Pat Robson	S3 General*	20



Schedule of Trialled Materials (3)

Set No	Task and Level	School	Teacher	Year and Level	No of Pupils
(14) 4, 5, 6	Pre-question (oral response) Exp. and control levels 1, 2, 3	West Calder H.S.	Liz Herd (control) Mike Wallace (Exp)	S3 Credit	26
(15) 4, 5, 6	Pre-question (oral response) Levels 1, 2, 3	West Calder H.S.	Liz Herd'S class Mike Wallace	S3 Found.	15
(16) 4	Text-organisation Level 1	Liberton H.S.	Carrie Woolverton	S3 Found./ General	19
(17) 4, 5, 6	Text-organisation Levels 1, 2, 3	Liberton H.S.	Joyce Fergie	S3 Credit	27
(18) 4, 5, 6	Prediction (In-Text) Levels 1, 2, 3	Liberton H.S.	Mike Falconer	S3 Credit	29
(19) 4, 5, 6	Prediction (In-Text) Levels 1, 2, 3	St Mary's	Pat Robson	S3 General*	20

Schedule of Trialled Materials (4)

Set No	Task and Level	School	Teacher	Year and Level	No of Pupils/ Other Subjects
(20) 4,5,6	Prediction (In-Text) Levels 1, 2, 3	Liberton HS	Scott Griffith	S3 General	24
(21) 6	Prediction (In-Text) Level 3	Liberton HS	Scott Griffith	S5 Higher	17
(22) 6	Prediction (In-Text) Level 3	Linguistics Post-Grad. Conf. (Edinburgh University)		Native Speaker (Post-Graduate)	11
(23) 6	"	"		EFL Speaker (Post-Graduate)	6

Section 4: Trialling of materials - implementation and comment

4.1 In this section, the trialling of the materials listed in the previous section, and the outcomes of that trialling, will be described.

4.2 There are at least two ways in which the trialling could be described:

- (1) a chronological account set by set across the range of inputs and tasks;
- (2) a chronological account along certain specified parameters, namely:  
inputs  
tasks: prediction (title and in-text)

text organisation

pre-questions.

4.3 The second method would seem to be less potentially confusing and more focussed on the main concerns of the Project, and this is therefore the method that will be followed. It will, however, involve reference to the previous section, especially paragraphs 3.5 (the sequential list of materials) and 3.7 (the schedule of trialled materials).

#### 4.4 Inputs

4.4.1 It will be remembered that the materials were devised in two more-or-less equivalent "cycles", each consisting of three sets of materials. Each of the three sets in each cycle was graded by difficulty, Set 1 being the easiest (level 1), set 2 more difficult (level 2) and set 3 most difficult (level 3). The main principle of grading was in terms of text structure (text organisation), the cline being from pre-structured inputs with clearly signalled structure, through pre-structured inputs with the structure not so clearly signalled, culminating in inputs which were not pre-structured.

4.4.2 The following issues will be discussed:

- (1) the success or otherwise of the grading system
- (2) motivation;
- (3) conclusions

4.4.3 The Grading System      The validity of the grading system was assessed in two ways,

(1) from teachers' and pupils' subject assessment of difficulty;

(2) from comparative scores in tasks.

4.4.4 The subjective assessment of difficulty for the first cycle was rather inconclusive in that pupils found both the Level 1 and Level 2 inputs very easy, while the Level 3 inputs were used with only one class and there was no discussion (at least on tape) of the level of difficulty of the input.

4.4.5 For the second cycle inputs, teachers were asked to respond to the following pro-forma question:

In your estimation, how difficult was the input (talk) for these pupils?

	Very Easy	<del>Moderately</del>		<del>Very</del>	
		Difficult		Difficult	
Level 1	1	2	3	4	5
Level 2	1	2	3	4	5
Level 3	1	2	3	4	5

4.4.6 Three responses which went across the range of levels were received. The returns were:

Class:	S3 General	S3 Credit	S3 Credit (very bright)	Av.
Teacher:	PR	MF	JF	
Level 1	1	2	1	1.3
Level 2	2	3	1	2
Level 3	4	4	1	3

4.4.7 Not too much reliance can be placed on these returns, obviously. It seems strange for example that the S3 Credit (MF) difficulty ratings are higher than the S3 general ones. This is probably due more to the rough and ready nature of the measuring system than to anything else. It is perhaps understandable that a very bright class might rate all the inputs as "Very Easy". However, the average assessment does seem to indicate an increasing level of difficulty.

4.4.8 Other data, perhaps more reliable, is provided by the experiment that was done with Liz Herd's S3 Foundation and Credit classes. The purpose of this experiment was to find out the comparative effects of the presence or absence of pre-questions. The experiment is described in detail below. For the present purpose the experiment has two useful features:

- (1) it was done on an individual basis;
- (2) the level of task difficulty was intended to be constant (unlike the other materials in Cycle 2 when the task-level was in lock-step with the input-level).

4.4.9 The pupils in this experiment were drawn as a whole group from two classes in West Calder High School. One class of S3 credit ability students were randomly assigned to experimental and control groups. There were twelve pupils in the experimental group who were given specific pre-questions on main points occurring in the three levels of inputs. There were fourteen pupils in the control group who received instructions simply to listen for the main points. Another group of five pupils at S3 Foundation Level were given the same specific pre-questions as the S3 credit experimental group. The scores for the number of questions correctly answered were tallied. These scores, turned into percentages, were subjected to an analysis of variance, with pupil's group as a between-subject variable (Credit experimental, Credit control, Foundation experimental) and the difficulty level of the input text as a within-subject repeated measure (Levels 1, 2 and 3). The results of the experiment are summarised in Table 4.4.10 below.

#### 4.4.10 Pre-questions Experiment: Summary Data

##### S3 Credit Class

Level 1 (out of 10 marks)	<u>Average Score</u>	<u>% Average Score</u>
Exp. GP	9.7	97%
Control	7.1	71%

##### Level 2 (out of 8 marks)

Exp. GP	7.2	90%
Control	5.7	71%

##### Level 3 (out of 6 marks)

Exp. GP	4.8	80%
Control	2.9	48%

##### S3 Foundation Class

<u>Level 1</u> (out of 10 marks)	3.2	32%
<u>Level 2</u> (out of 8 marks)	2.4	30%
<u>Level 3</u> (out of 6 marks)	1.2	20%

4.4.11 The analysis showed a main effect of pupil group ( $F_{2,28} = 18.77, p < 0001$ ). Scheffe tests showed that S3 Foundation (mean = 27.3%) differed significantly from S3 Control (mean = 63.3%) and S3 Experimental (mean = 89%) but that the observed difference between S3 Control and S3 Experimental did not reach statistical significance. The analysis also showed a main effect of grade ( $F_{2,56} = 6.24, p < 003$ ). Scheffe tests showed that the Level 3 (mean = 55.9) was significantly more difficult



than Level 2 (mean = 70.9) and Level 1 (mean = 76.1), but that the observed difference between levels 1 and 2 was not statistically significant. The interaction between group and difficulty was not significant.

4.4.12 There is therefore evidence that these pupils found the "pre-structured" materials significantly easier than the "off-air" materials. Although there was an observed difference between the "clearly signalled" pre-structured materials and that not so clearly signalled, this was not found to be significant. Also, there was an observed difference between the experimental group, which had been given specific pre-questions and the control group (which had simply been given generalised instructions), but this difference was not statistically significant.

4.4.13 Motivation: In general, the pupils did not find the first cycle motivating and there were three main areas of complaint:

- (1) the tasks were too easy;
- (2) the inputs were delivered in a monotonous way, with too many "sentence fillers" (usually transcribed as um/er etc);
- (3) the input-topics themselves were uninteresting.

4.4.14 The first point will be returned to later. With regard to the

inputs, it will be remembered that the talks for Set 1 and Set 2 were improvised from an outline diagram with the speaker "speaking to" the microphone. This technique, intended to produce more natural speech, in fact produced a lot of hesitation which proved quite distracting on tape. Also, since only one speaker was involved there was a sameness about the tapes. Further, it was felt that the fact there was no audience present further contributed to the "flatness" of the delivery.

4.4.15 It was therefore decided,

- (1) generally to go for a variety of voices;
- (2) to deliver the pre-structured talks to a live audience, and achieve the desired control over length by subsequent editing

4.4.16 In spite of these changes, the responses for the second cycle was still unenthusiastic. The main negative comments were:

- (1) "the class found the level 1 tape (Soldier, sailor... beggarman, thief) very patronising - pitched at primary pupils. Unsuitable for secondary pupils". (S3 General:PR)
- (2) "Select more contemporary and interesting subjects"; (S3 General:SG)

(3) "Conversation, or out of context talk, is very difficult to follow with no visual clues. Does listening need to be tape-based? What about VCR?" (S3 Credit: MF)

(4) "Found the material very dry - unconnected and 'bitty' - lack of follow-up for example. As 'one-offs' the pupils didn't 'get into' the material". (S3 Credit: JF)  
and a positive comment:

(5) "Listening input in form of argument/discussion might prove more motivating. Level 3 tape (A woman's place is in the Home) very well received and sparked off much discussion outwith scope of listening exercise."  
(S3 General: PR).

4.4.17 To set against the last comment is the comment of the S3 Foundation level class (West Calder) who did the Pre-questions experiment. They liked the level 2 input (Top of the Pops), but did not like the Level 3 input (Is there such a thing as a just war?), in spite of the fact that the latter was a lively discussion with "good voices". Obviously, the tape was too abstract for them, while the Level 2 topic was closer to their interests.

4.4.18 Whatever progress might have been made about grading inputs, obviously no formula has been found for designing motivating inputs. The following points can be noted:

- (1) Although some of them still left much to be desired, the Second Cycle inputs were undoubtedly an improvement on the First Cycle. Delivery in a real situation does not guarantee an acceptable input (see the negative comment on the Level 1 - Set 4 inputs), but it does help. Discussion/argument does make for a livelier input, but must be geared to the pupils' levels and interests.
- (2) No complaints were made about the extracts being too long or too short, although Joyce Fergie noted the problem of 'one-off' inputs that the pupils couldn't 'get into'. This is probably due to the fact that each of the tapes used in that case was from a different set, with a completely different theme. In general, teachers seemed satisfied with the length of inputs.
- (3) It is possible for pre-structured texts to be found interesting, as in the case of the 'Top of the Pops' input. If teachers decided to use this pre-structuring technique then it might be possible for them to give short talks to classes on any subject that might be of interest, speaking from an outline structure, as the speakers on the Project tapes did. Perhaps the talks could be recorded as they were delivered and the resulting tapes used for:
- (a) feedback during or after the performance of the task (e.g. a text-organisation task, or whatever);

(b) possibly for use with other classes.

The degree of signalling of structure together with the complexity of the structure could then be a rough grading principle, at least for certain tasks.

- (4) This technique would not exclude the possibility of scripted inputs, but would be an additional variation.
- (5) Off-air inputs can be motivating, but it is still very much a matter of serendipity. For example, it required a long search before an input was found that was suitable for the text-organisation exercise at Level 3 - eventually one was found, not off-air, but on cassette. The text organisation of argument or discussion, for example, tends to be very complex.
- (6) Whatever kind of audio-taped material is used, it will probably need editing down to bring it within the attention span of most pupils. If much of this kind of material is going to be produced by teachers, then twin-cassette machines, or some kind of central editing service, should ideally be available.
- (7) All the above comments refer to expository material (which is taken to include argument or discussion). Other kinds of material (e.g. description, narrative) have been dealt with elsewhere, as previously explained.

4.4.19 Perhaps the final word on interest and motivation should be left with a pupil in Pat Robson's S3 General class who said in group discussion of the interest-value of the materials:

"Put it this way + it's better than working"

(PR: S2-Gp 1, Set 1, Text Organisation 3)

#### 4.5 Prediction (Title)

4.5.1 The trialling gave pupils the opportunity to show what predictions they could make from the presence of useful titles (or titles that were intended to be useful).

4.5.2 The materials trialled were as follows (see 3.7):

(1) Set 1: Task Level 1: S3 Foundation (7 pupils)

(Teacher: Liz Herd)

(2) Set 1: Task Level 2: S4 CSE (11 pupils)

(Teacher: Pat Robson)

(3) Set 2: Task Level 2: S4 CSE (11 pupils)

(Teacher: Pat Robson)

4.5.3 In the Set 1/Task level 1 materials, the pupils were given a summary title ("Types of Computers"), were also given a list of possibilities and were asked to say which,

- (1) was almost certain to be mentioned
- (2) might be mentioned, and
- (3) will probably not be mentioned

They were then asked to listen to the input and check whether their prediction was correct or not.

4.5.4 The results were as follows: (Topics which were indeed mentioned have been ticked in the final column).

TITLE: TYPES OF COMPUTERS

Topic	<u>almost certain</u> to be mentioned	<u>might be</u> mentioned	will probably <u>not</u> be mentioned	Check
1. the size of computers	2	3	2	7 ✓
2. computers and space travel		4	3	1
3. different kinds of computers	5	2		7 ✓
4. computers replacing people in jobs	6	1		6
5. what computers are used for	4	3		6 ✓
6. microcomputers	4	3		7 ✓

(Class details: S3 Foundation Level (LH) N=7)



4.5.5 These data would seem to indicate that these Foundation Level Pupils are not making as much use of the title as they could be. It might have seemed that in a talk entitled "Types of Computers" the topic of "Different Kinds of Computers" was absolutely certain to be mentioned. Similarly, the size and use of computers would have seemed reasonable bets for the "almost certain" category. "Computers replacing people in jobs", while very much in the news, does not justify its position as the most popular choice. Also, "microcomputers", being themselves a very common type of "computer" might have been more highly favoured. The most surprising thing is that nearly all the pupils who expected topic 4 to be mentioned actually heard what they expected to hear! Although jobs are mentioned (see transcript, Appendix B), the input says nothing about computers replacing people in jobs which is, in fact, the subject of the next talk. This indicates a possible negative effect of "title-prediction" (here meaning prediction from a title), which is that a wrong prediction can create false expectations, thus hindering comprehension instead of facilitating it. (This is, of course, a special aspect of a much wider problem of reader/listener expectations which can trap even sophisticated readers/listeners, as I.A. Richards demonstrated in Practical Criticism a long time ago). This does not seem to be a reason for abandoning the technique, but rather the reverse. Since titles are designed to create expectations, pupils should be aware that predictions can be "wrong"; in the present specific example there would be a case for replaying the tape as many times as it was necessary for the pupils to see for themselves

that their prediction had not been realised in the input. (The last piece of jargon is an attempt to avoid the phrase "had been wrong". Pupils should somehow realise that Predictions as such cannot be "right" or "wrong" - they can only be more or less likely. An "excellent guess" might still "not be there in the talk" - perhaps this last phrase is the kind of language which could be used instead of "wrong".)

4.5.6 In the Set 1/Task Level 2 materials, the pupils were asked to predict topics from the title on the 3-point probability scale already described. In addition, at this task level they were asked to supply "two other topics which you think the speaker probably will mention."

4.5.7 In this class, the answers were agreed on a group-basis. There were two groups (Group 1 and Group 2) and the group responses are indicated accordingly. The results in the probability scale were:

Title: Computers and Jobs

---

Topic	<u>almost certain</u> to be mentioned	<u>might be</u> mentioned	will probably <u>not be</u> mentioned	Check
<hr/>				
1. computers replacing people in jobs	Gp1/2			Gp1/2 ✓
2. people working at home instead of an office	Gp1	Gp2		Gp1/2 ✓
3. new jobs in Scottish factories making computers	Gp1	Gp2		Gp1/2 ✓
4. robots that help old or disabled people			Gp1/2	

---

(Class details: S4 CSE (PR) N=11)

4.5.8 The topics predicted by the groups themselves were:

- Group 1: (1) Computers in cars  
(2) Computers in the home
- Group 2: (1) Robots in factories  
(2) 0

4.5.9 It will be seen that both Groups did well in making defensible predictions on the probability scale. The taped discussions reveal that this task was done very quickly and generated very little discussion. Occasionally members of a group swithered over "almost certain to be mentioned" or "might be mentioned" but the issue was resolved very quickly by a kind of group consensus without discussion or argument. On the other hand

they found the task of making their own predictions very difficult. Group 1 came up with two not very satisfactory predictions, and Group 2 came up with only one (a good suggestion: probably cued by topic 4). Again, the actual amount of discussion relevant to the topic was minimal. The pupils urged one another to come up with a suggestion (Right + somebody make up one then; Come on then + think of something) and when nothing was forthcoming wandered off the task eventually coming back to it again. One group member attempted to delegate this difficult task:

You do suggestion 1 and 2 + and we'll do the bit over the page

Pressure was brought on individuals:

You haven't done anything yet + come on Spike.

leading to:

Robots and factories +

We've got that + eh +

No + robots that help old + or disabled people +

Aye suggestion one +

Robots and factories (chorus)

4.5.10 In the Set 2/Task Level 2 materials, the task was exactly as described above, it being the same task level. Again the responses were on a group basis.

Title: Recording and Playing Back Sounds

---

---

Topic	<u>almost certain</u> to be mentioned	<u>might be</u> mentioned	<u>will probably</u> <u>not be</u> mentioned	Check
<hr/>				
1. cassette recorders	Gp1/Gp2		Gp2	✓
2. 2nd World War		Gp1	Gp2	GP1/2 ✓
3. compact discs	Gp1/2		GP1/2	✓
4. pop music	Gp1(5)	Gp1/2		

---

(Class details: S4 CSE (PR) N=11).

4.5.11 Suggestions volunteered by the groups were:

- Group 1: (1) Record Player  
(2) Football Match
- Group 2: (1) Videos  
(2) Record Player

4.5.12 The pattern of the previous set is repeated. The class makes sensible suggestions on the probability scale, but (unlike the S3 Foundation Class) can check that a topic which they thought less likely ("the second World War") has, in fact, been mentioned. However, they continue to have problems generating their own plausible predictions. The tape again reveals minimal reasoned discussion, decisions being made by an agreed,

but unexamined, consensus.

4.5.13 The trialling would seem to indicate this as a task which even the less able pupils were able to make a stab at even if they did not find it very stimulating. Obviously, it is the kind of exercise which teachers can (and do) perform orally. However, the addition of a probability scale does provide the opportunity for checking predictions in greater detail after listening to the input and the reasons for certain predicted topics being present (or not present) in the talk might be usefully discussed. What remains to be experimentally demonstrated for the target population of pupils is whether this kind of title-prediction exercise does in fact facilitate their comprehension. The hypothesis would be that titles of expository inputs do help, since that is usually what they are intended to do, but it would be interesting to have more evidence on this in addition to the data from the Project previously referred to (see Section 2.10 above).

#### 4.6 Prediction (In-Text)

4.6.1 The trialling gave pupils the opportunity to show what "in-text" predictions they could make at certain chosen points in a listener's input. The technique was that the pupils would listen to an input which would be interrupted from time to time by a buzzer. If they were working in groups, they would then try to come to an agreement as to what the speaker was going say next. Having come to this agreement, they would then turn

a page to reveal a set of multiple-choice options, one of which was what the speaker was actually going to say. They would choose one of the options. If they felt able to make a decision and chose an option, the talk proceeded until the next interruption. If they so wished, however, they could ask for part of the tape to be replayed. At the end of the input, they have to say, without hearing the tape again, whether their prediction had been "right" or "wrong" (for the reasons explained previously, this would seem to be an unhappy wording). At the higher levels of this task, the pupils had occasionally to do without the multiple-choice "prop" (as it was intended to be), and to write down the prediction they had arrived at. (On the basis of what had been found with the title predictions, it was assumed that pupils would find it harder to generate their own predictions than select from a list provided for them.)

- 4.6.2 In-text Prediction is, of course, as old as the detective story, and there were even some Ellery Queen novels where the readers were provided with blank pages in the penultimate chapter to write down their predictions of the outcome! It has also been used in Listening Comprehension in a similar way: In David Northcroft's Hearsay (1984), there is an example of prediction tasks related to a mystery story ("The Mystery of the Beehive", Hearsay, pp 78-81). However, what was being trialled was something quite different; local prediction, based on whatever structural, lexical or pragmatic cues were available. Since this was very much an "on-line" task, and



also fairly innovative in its implementation, it was more extensively trialled than the others.

4.6.3 The materials trialled were as follows (see 3.7 above):

(1) Set 3 task levels 1 and 2. Piloted by MW with an extract group from PR's S3 General Class (6 pupils)

(2) Set 3 task levels 1, 2 and 3. S2 General (20 pupils)  
(Teacher: Pat Robson)

(3) Sets 4, 5 and 6. Task levels 1, 2, 3. S3 Credit (29 pupils) (Teacher: Mike Falconer).

(4) Sets 4, 5 and 6. Task levels 1, 2, 3. S2 General (20 pupils) (Teacher: Pat Robson)

(5) Set 6, S5 (Higher) (7), Post Graduate Native-Speakers (11), PG-EFL(6).

4.6.4 It will be remembered that the Set 3 inputs were recorded off-air. In these materials, three levels of task difficulty were designed as follows:

Level 1: 3 Predictions, all multiple choice

Level 2: 4 Predictions, 3 multiple choice and 1 written prediction

Level 3: 5 Predictions, 4 multiple choice and 1 written

4.6.5 For sets 4, 5 and 6 the tasks were as follows:

Set 4 (pre-structured input): 5 predictions, all multiple choice

Set 5 (pre-structured input): 5 predictions, 3 multiple choice and 2 written

Set 6 (off-air): 7 predictions, 4 multiple choice and 3 written.

4.6.6 It would seem that the simplest way of discussing how the pupils did with these predictions is to band the predictions according to how easy or difficult the pupils found them. The predictions have therefore been categorised in this way by "facility bands", as described in the next section (4.6.7).

#### 4.6.7 Prediction (In-Text) Task: Summary Data

##### 4.6.7.1 Facility Bands at various levels\*

###### Banding

<u>"Facility Index"</u>	<u>Categorisation</u>
1.0 - .75	Very Easy
.74 - .5	Easy
.49 - .25	Difficult
.24 - 0	Very Difficult

\*These bands have been arrived at in this way. The number of "correct" responses is divided by the number of pupils responding to give a "facility index" for that prediction. These scores have then been banded at four levels of approximately equal spread to give the "facility bands."

(Note: In the tables below, P1 means Prediction No. 1 and so on)

4.6.7.2 Set 3 (Input level 3) Class: S3 (Gen) (PR)

Task	Level 1	Level 2	Level 3
Very Easy	P1,P2,P3	P3,P4	P1,P2,P3,P4,P5
Easy	-	P1,P2	-
Difficult	-	-	-
Very Difficult	-	-	-
Average Score	75%	68.6%	98%

4.6.7.3 Set 4, 5, 6 (Input Levels 1, 2, 3)

Set 4 (Input Level 1) (Input levels and task levels for sets 4, 5, 6 in lock-step progression)

Task Level 1

	(n=21)	(n=24)	(n=27)	
Trial Group	S3 Gen (PR)	S3 Gen (S6)	S3 Credit (MF)	All
Very Easy	P1, P4, P5	P1, P4, P5	P1, P2, P4, P5	
Easy	P3	-	-	
Difficult	-	P3	P3	
Very Difficult	P2	P2	-	
Average Score	74%	62%	77%	71.2%

Set 5 (Input Level 2)

<u>Task Level 2</u>				
	(n=21)	(n=18)	(n=27)	
Trial Group	S3 Gen (PR)	S3 Gen (SG)	S3 Credit (MF)	All
Very Easy	P1,P2,P3,P4	P1,P2,P3,P4	P2,P3,P4	
Easy	-	-	P1,P5	
Difficult	P4	-	-	
Very Difficult	-	P5	-	
Average Score	83%	62%	73.4%	72.4%

Set 6 (Input Level 3)

<u>Task Level 3</u>				
	(n=18)	(n=19)	(n=27)	
Trial Group	S3 Gen (PR)	S3 Gen (SG)	S3 Credit (MF)	All
Very Easy	P3,P5,P6	P5	P5,P6,P7	
Easy	P4, P7	P3,P4,P6	P2,P3,P4	
Difficult	P1,P2	P1,P2,P7	P1	
Very Difficult	-	-	-	
Average Score	67%	48%	71.4%	63.2%

	(n=7)	(n=11)	(n=6)
Trial Group	S5 Higher (SG)	PG - NS	PG - EFL
Very Easy	P3,P4,P5	P2,P3,P4,P5	-
Easy	P6,P7	P6,P7	-
Difficult	P2	P1	P3,P7
Very Difficult	P1	-	P1,P2,P4,P5,P6
Average Score	69%	77%	38%

<u>NS Most Frequent Predictions</u> <u>for Task Level 3 (Set 6)</u> (These predictions appear at least 2 times out of 5 at the levels indicated)	Very Easy	P3,P4
	Easy	P4,P6,P7
	Difficult	P1,P2
	Very Difficult	-

4.6.8 If we look at Set 3, we see that with the input level kept constant the average for Level 2 was lower than for Level 1 (indicating, of course, that the pupils found Level 1 questions more easy), but the average for Level 3 went right up to 90%. The "difficulty" element that had been built in to Levels 2 and to 3 was that of writing out the answers for some of the responses, as opposed to only choosing from multiple-choice responses. Obviously, at this level the problem of generating one's own answer was not sufficient to offset the fact that the class found the general level of the predictions easier. The key issue in grading the in-text prediction tasks is therefore the ease (or otherwise) of the prediction rather than the degree of support of this kind provided.

4.6.9 With Set 6 (see 4.6.7.2), the materials were trialled with 5 different NS groups: 3 classes at S3 level, a Higher class at S5, and a group of Post-Graduates. (Some predictions appeared at different facility band levels for different groups (e.g. P1 was found "Very difficult" (ie 0 - 24) by S5 Higher but only "Difficult" (ie 25-49) by PG-NS). However, all the predictions for the various groups appear at least twice at a given facility band, and most at least 3 times (eg. P5 appears at the "very easy" level (75-1.0) for all 5 native Speaker Groups). Using this as a criterion, we can grade the Predictions in terms of difficulty, as listed in the final table of 4.6.7.3.

4.6.10 The first thing we notice is that P1 and P2 (ie. the first two predictions in the text) are noted as "Difficult" by most groups. An obvious factor here might be that the listeners are still "tuning in" to what they are going to hear. One notices, however, that this did not affect Set 3 at any of the task levels (see 4.6.7.2) or Set 4/Task level 1 or Set 5/Task level 2, where in nearly all cases the first two predictions are rated as "very easy" or "easy".

4.6.11 So, while the tuning-in factor cannot be discounted, there may be another factor at work. The context of the first two predictions is as follows (for full text, please see Appendix B, pp 390-1).

"Would you like to see the Equal Opportunities Commission abolished + Sex Discrimination Act repealed + do you think women should stick to being good housewives + or if they simply must work + to caring professions such as nursing + do you think that in the home the man should/(P1) always make the final decision + well if you do + you're probably already a member of the Campaign for the Feminine Woman + but if you don't you're probably as astonished as I am that any such campaign exists + well it does + it was founded in 1979 by a married couple + David and Yvonne Stade who are now in our Oxford Studio + + + you see it seems to me that your arguments + em + can be disputed just on facts + would you want to see a society in which a Madame Curie wasn't allowed to be a physicist + a society in which Margaret Thatcher wasn't

allowed to be a Prime Minister + (ah) + in which a woman who  
wished to work as a welder + and there are such women +/(P2)  
shouldn't be allowed to do it +.

4.6.12 The pupils were given three choices for Prediction 1 (expected prediction asterisked) and chose as follows:

(a) help his wife out with the housework - 47%

(b) do things like painting, decorating and  
gardening - 22%

\*(c) always make the final decision - 31%

(All S3 classes, n=60)

It will be seen that the most popular prediction (a) is, in fact, the least likely one in the context. In PR's, S3 General class (Group 2), the issue was argued out at some length and out of the group of 7, two chose (a), four changed from (a) to (c), while one stuck by his guns and stayed with (a), as the following excerpts shows:

he wants the Sex Discrimination Act abolished +

so its going to be C+

they're saying A + but that's making it

chauvinist + right + it's giving you the first

chauvinist attitude first + so its got to be C+

(...) ten pence +

I'll ten pence you +

you're going for C + I'm going for A.



In Group 1, on the other hand most of the discussion was about the pupils' own attitudes, rather than the speakers'. There is some brief mention of what pupils' own parents roles, then

A + C I think it's C + its' more important +

You're a fascist + (...)

right so everybody's finished that

The group choice, was, in fact, (a) - so the "fascist" option was rejected; and of course (c) was only proposed on its own merits ("it's more important") and not from the point of view of the speaker on the tape.

4.6.13 The same issue arose with Prediction 2. The choices given were as follows (expected predictions asterisked), with percentages opting for each choice:

(a) should be a welder if that's what she wants to be - 5%

\*(b) shouldn't be allowed to do it - 39%

(c) should be allowed to do it, but only if she can do it as well as a man - 56%

(S3 General (PR) n=18)

4.6.14 It will be seen that most of the pupils in this S3 general class have gone for the "reasonable" alternative of (c). Yet (b) is strongly cued not only by the general force of the argument, but also by the parallel discourse structure:

- (1) ... Madame Curie wasn't allowed to be a physicist +
- (2) ... Margaret Thatcher wasn't allowed to be Prime Minister  
+
- (3) ... a woman who wished to work as a welder ... (shouldn't  
be allowed to do it)

The reason for the class missing these cues has been picked up by one of the pupils himself as this excerpt shows:

(boy's voice) shouldn't be allowed to do it + that is +  
shouldn't be allowed to do it + it's shouldn't be allowed to  
do it...

(girl's voice) a + should be allowed to be a welder if that's  
what she wants to be

(boy's) no + it's shouldn't be allowed to do it + bet you +  
(girl, indignantly) how+

(boy 1) because + have you been listening to that or are you  
just telling your own opinion +

(girl, laughing) just taking my own opinion +

(boy 1) aye well + you're wrong then + it's B + because that's  
what he's going + Margaret Thatcher shouldn't be allowed to be  
a Prime Minister + and a woman shouldn't be allowed to do it  
if she wants to become a welder + that's my opinion +

(boy 2) C

(boy 1) alright C if you want

(various voices suggest A, B and C)

(boy 2) let's be smart + let's be smart +  
 (boy 1) let's be smart + it is B  
 (boy 3) it is B anyway + ---  
 (boy 1) a word from the women + what are you saying +  
 (girl's voice) I would say A ...  
 (boy's voice) we've just decided its B +  
 (girl's voice) you've decided + not me

There is nothing on the tape which shows how the final consensus was arrived at, but the written returns show that the whole group except one eventually chose (b) - the pupil who stood out against the others, being curiously enough, a boy.

4.6.15 This excerpt shows the persistence of the listener's own attitudes over-riding information coming from the tape even when the evidence is highlighted in the group discussion. It is also demonstrating the educative value of the discussion process, when there is someone in the group (as in this case) who is capable of adducing evidence from the input to support his case. It would seem that his arguments finally overcame most of the opposition in spite of initial resistance. The excerpt also shows how the discussion can heighten the pupils' awareness of the process of good listening ("have you been listening to that or are you just taking your own opinion?") - the other pupil's embarrassed laughter in response to this seems to show that she has taken this point on board.

4.6.16 This may be an appropriate point to note the difference in scores recorded by the two S3 General classes. Whereas PR's class performed very well (mean = 67%) in terms of the predictions they got right, SG's (mean = 48%) performed significantly less well (out of 7 predictions, difference of 2.976 with DF = 35 where  $t = 2.042$  at  $p < 0.05$  significance two-tailed). It might well be that observed differences in the level and quality of discussion could be the critical factor here. SG reported that discussion did take place, although it was not recorded, but that it was rather perfunctory in nature. PR's groups, on the other hand, did discuss the tasks fully as evidenced by the tape data. The performance of PR's S3 General class in these tasks therefore seems to support the value of good group discussion in this area, and indeed if this kind of difference in performance had not been evident, one might have questioned the value of group discussion in listening tasks.

4.6.17 Going back again to the Predictions which cause some difficulty, we see that by Prediction 3, which is in a similar vein, PR's S3 General class have now got the idea that they are looking for the speaker's point of view and not their own, but the Liberton (SG) S3 General class is not so successful.

The immediate context for Prediction 3 is as follows:

(Colin Bell) well and both the studio manager and the producer whom I can see through a piece of glass are women and you

would maintain that + \* (they should both be at home making homes for somebody would you +)

4.6.18 The responses from the two S3 General classes were as follows:

	PR (n=18)	SG (n=19)
(a) they should both be allowed to do these jobs	22%	47%
* (b) they should both be at home doing the job of housewives	50%	37%
	} 78%	53%
* (c) the BBC should not allow women to do such jobs		
	28%	16%

(both (b) and (c) accepted as correct).

4.6.19 Whereas for PR's class this was now in the "Very Easy" category, (i.e. they performed very well in it), for SG's class it was in the "Easy" category, and in view of the full discussions which have taken place in PR's class, these results would seem to indicate a group discussion factor at work. i.e. that some pupils by working through and discussing a set of prediction tasks are developing more effective listening skills.

4.6.20 At task Level 1 (Set 4), the Predictions which were found difficult were Prediction 2 and Prediction 3 (see 4.6.7.3 above). The context for the first 3 predictions at task level 1 is as follows:

Tinker, tailor, soldier, sailor + rich man poor man + beggarman thief + + + I want to talk about tinkers and tailors + but above all about soldiers and sailors + and beggerman and thieves + + + soldiers and sailors + Britain is an island + we've all we've had a long seagoing tradition + of many thousands of years + if we were going to go anywhere outside Britain/(P1) we had to go by sea + + it's interesting to notice that the language of the sea is English just as the language of communication today so + is largely English/(P2) + + so we have a lot of sea words in our language + but at one time Britain was the centre of an Empire + which rules one-quarter of the globe + and British sailors and soldiers went + to different parts of the world and when they came back + they brought with them + words from the places they had visited or they had fought in + so we have soldiers' words + and sailors' words + + + soldiers' words + volley + rifle + tank + + + tank were at first just tanks + but when the British were + ah + building their secret weapon in the first world war they didn't want the Germans to know + so they simply said they were building watertanks + and no German spy/(P3) + would be interested + in watertanks + +

4.6.21 The responses for these predictions are as follows (\*= expected response):

		S3 Gen (PR)	S3 Gen (SG)	S3 Credit (MF)
P1	(a) it would be very dangerous	-	-	4%
	*(b) we had to go by sea	100%	100%	96%
	(c) we would have to speak another language	-	-	-
P2	<u>so</u> - - - -			
	*(a) so we have a lot of sea words in our language	19%	0	89%
	(b) so English is the best known World Language	81%	100%	4%
	(c) so the BBC is listened to everywhere	-	-	-
	NIL response	-	-	7%
P3	(a) would know what they were talking about	33%	12%	52%
	*(b) would be interested in water-tanks	62%	38%	30%
	(c) managed to get this information	5%	50%	18%

4.6.22 Prediction 1 was found to be "pretty obvious" as one pupil said, and this is reflected in the scores. Prediction 2 shows interesting variations between the S3 General classes on the one hand and the S3 Credit class on the other. Both the General classes plump for (b). The difference might be in the use which S3 Credit class might have made use of the overall title (The History of English Words) but since the discussion was not taped we don't have any information on this. In the taped discussion in Pat Robson's S3 General class, alternative



(a) was dismissed almost out of hand e.g. in Group 1's discussion:

(pupil 1) it can't be C +

(pupil 2) and it can't be A + so + it just has to be B.

Unfortunately no-one explains why (a) is regarded as an impossible option. It could be that the phrase "just as the language of communication + is largely English + + +" was dominant in the pupils' considerations.

4.6.23 Prediction 3 shows interesting variations in response:

whereas the majority of PR's S3 General went for (b), half of SG's S3 General went for (c) and most of the S3 Credit class for (a). In PR's class, even the group (Group 3) that eventually chose (a) only did so after a long discussion. They quickly discounted (c). Someone wondered at one point whether water-tanks might be a kind of tank that went under water!

Groups 2 and 3 also quickly discounted (c), but chose (b) after some consideration of (a). Obviously, since all the responses were plausible, this prediction called for rather fine judgement, and this might account for its relatively high difficulty level.

4.6.24 At task level 2 (Set 5), there were no predictions that were found consistently difficult. PR's S3 General performed badly with P4, and SG's S3 General badly with P5. (for the full

text of this input, see App. B). The paradox about P4, is that the speaker says (after arguing about the importance and usefulness of computer games): "What is crucial to this discussion however + is that in all probability + the author of such a programme (sc. computer games programme) + was a spotty teenager whose main passion in life is + you've guessed it/\* + (P4) (computer games)." In fact two of PR's three groups made a wrong guess and said something like: "to write his or her own computer programmes." This doesn't really make sense in the context, where the speaker is arguing that the "fun" activity of playing games (disapproved of by parents) leads to the "serious" activity of designing programmes (approved of by parents). This prediction fell into the "Very Easy" category (i.e. easily done) for both SG's S3 General and MF's S3 Credit.

#### 4.6.25 For Prediction 5, the immediate context is:

"These games + the ones which are published that is + sell for very large sums of money + and if you have a twelve-year old genius at home /\* (P5) (he or she could be worth a lot of money to you)." Both PR's S3 General and MF's S3 Credit picked up the "very large sums of money" clue, and consequently scored well in this. SG's S3 General class, however, went for answers like "then encourage him to write games" which (while not unreasonable predictions) do miss the point a bit.

#### 4.6.26 Having looked at the Predictions which caused problems, let us

now briefly look at one last interesting piece of data. One is impressed by the way in which the scores of the S3 classes, for task level 3 (Set 6) compare favourably with the Post-Graduate Native Speaker (PG-NS) Group and the S5 Higher Class. In fact, if we take the S3 classes as a whole (mean = 63%) and compare the overall prediction scores with the PG Native Speaker Group (mean = 76%) and the S5 Higher Class, (mean = 69%) there is no significant difference (difference of 1.942 with DF = 76 where  $t = 2.000$  at  $<0.05$  significance, two-tailed).

4.6.27 There were the following differences between the groups compared (ie. S3 v. PG-NS/S5 Higher)

- (1) The PG group did not have the opportunity of replay. On the other hand, MF had only one replay for P1, P2 and P5 and no replays were recorded for SG;
- (2) The PG group did not have the benefit of group discussion;
- (3) All the S3 classes had progressed through the levels (ie. from level 1 and level 2 to level 3) but the S5 and PG-NS group had come straight in at level 3.

The last point seems to provide further evidence for the usefulness of a graded series of tasks for fostering the

development of Listening Comprehension, in that the surprisingly comparable scores of the S3 Group as a whole with an older and more academically able group of subjects might well, in part at least, be due to the training factor involved in progression through the levels.

4.6.28 One other point might be made about the Post-Graduate EFL scores for task Level 3, Set 6 (see second task table in Section 4.6.7.3). Although the difference in scores between this group (mean = 38%) and the S3 General classes (mean = 57%) was not found to be statistically significant it is interesting to note that all the Predictions for this group come into the "Difficult" category, ie. in no case did the Facility index for these subjects go above .49 for any prediction (i.e. no more than 49% of the group got any of the given predictions right). The language ability of Foreign Post-Graduate students at Edinburgh University is now carefully screened; furthermore all these subjects were probably language teachers at an advanced level or at least (by definition) students of language at a very advanced level, and obviously intellectually of a very high level. Yet this group found this task an extremely difficult exercise, which reminds us once more of the language abilities present in even our less well intellectually endowed pupils as opposed to even very advanced speakers of English as a Foreign Language. Indeed, one of the problems of someone coming from an EFL background (and there were indications in the preparation of Tony Lynch's descriptive materials of the same problem) is to

underestimate the Native Speaker's capabilities - which might come as news to some classroom teachers of less able pupils!

4.6.29 The trialling would seem to indicate the following conclusions:

- (1) the use of written responses as opposed to responses based on m.c. questions did not work as a grading factor for tasks as was intended;
- (2) the difficulty of the individual tasks (predictions) was related to a number of other factors, notably the imposition by listener's of their own views on what they anticipated the speaker to say;
- (3) in the classes for which we have taped data, the prediction task was capable of generating fairly full discussion, although it did not do so in every class;
- (4) there was a significantly better performance in the class where fuller group discussion took place;
- (5) the three S3 General classes who had worked their way through the levels did surprisingly well when compared to how much more advanced groups who went straight in at level 3 (although for one of those groups, other variables were also involved).

4.6.30 There seems to be a good case for recommending this kind of prediction task as a potentially useful and motivating procedure. As opposed to the grading of the inputs, the grading of the tasks in this area is still unresolved, since very many variables are involved. In general, however, emotionally or attitudinally loaded predictions will probably be found more difficult.

#### 4.7 Text Organisation Analysis

4.7.1 The purpose of this task was to facilitate the pupils ability to get the gist of an expository input by making them more aware of the structure of the input-text. As before, inputs could be graded in difficulty by being more or less "helpfully" structured.

4.7.2 With the Set 1 materials ("Computers"), the tasks were graded in this way.

Level 1 Pupils were given an outline text-organisation diagram with all the points listed in the appropriate box. They simply had to follow the points being made in the talk and tick them as they occurred.

Level 2 Pupils were given an outline text-organisation diagram, with some of the points supplied (see next page Figure 4.7.1, for an example). They were also

Computers 2

Main Topics

Less Important Topics

Box 1

computers have  
caused loss of jobs

Box 2

Box 3

Box 4

computers have also  
created new jobs

Box 5

Box 6

Box 7

Box 8

Box 9

some people will  
be able to work in  
neighbourhood  
offices

Figure 4.7.1



given stick-on labels on which was typed the missing information. They simply had to stick the missing information onto the appropriate box.

Level 3 Pupils were given an outline text-organisation diagram with none of the points supplied. They had to stick the missing information on to the appropriate box from the label supplied.

4.7.3 The tasks were organised in this way, with an extremely shallow-ended approach, since it was anticipated that they might find this kind of task rather abstract and difficult. In fact, the S3 General class (PR) on which it was trialled found all the tasks extremely easy, performing them quickly with 100% accuracy. Very little discussion was generated.

4.7.4 The Set 2 materials ("Modern Communication") were therefore geared up in difficulty, and the tasks were graded in this way:

Level 1 Pupils were given two columns of empty boxes, the columns being titled MAIN TOPICS and LESS IMPORTANT TOPICS. They were given a list of topics to key into the boxes. The topics were arranged in the order in which they occurred in the talk, but some distractors were built in. Pupils were allowed to fill in the boxes as they heard the talk and also could continue working when the talk was finished

(see Figure 4.7.2 for a filled-in example).

Level 2 Similar to Level 1, except that the pupils were given a few more options to choose from in the LESS IMPORTANT TOPICS column (see Figure 4.7.3 for filled-in example).

Level 3 This again had two columns except that the MAIN TOPICS and LESS IMPORTANT TOPICS options were put together, and in random order (see Figure 4.7.4). In case some pupils might not be familiar with Videorecorders they were given, as visual back-up, a diagram of one with functions labelled.

4.7.5 Again, Pat Robson's S3 General class, on whom it was trialled found the Level 1 and Level 2 tasks very easy, but the Level 3 tasks more demanding. PR's comments are: "Clearly lost fairly quickly though no-one asked for the tape to be stopped - I had to do it. Tape rewound to beginning, then asked for pauses - 3 times and then from beginning again (mainly for Group 1). Still some cross-checking during task. Found the task itself more demanding. No-one seemed to be referring to visual back up".

4.7.6 An examination of the answer-sheets again shows a 100% correct response at all 3 levels. However, the answer sheets were also checked for answers which were changed, as evidence of indecision and indirectly therefore of difficulty experienced by the pupils. The results were as follows:

Modern Communications 1

Main Topics

1

4

6

Less Important Topics

A

C

D

F

H

L

Choose From:

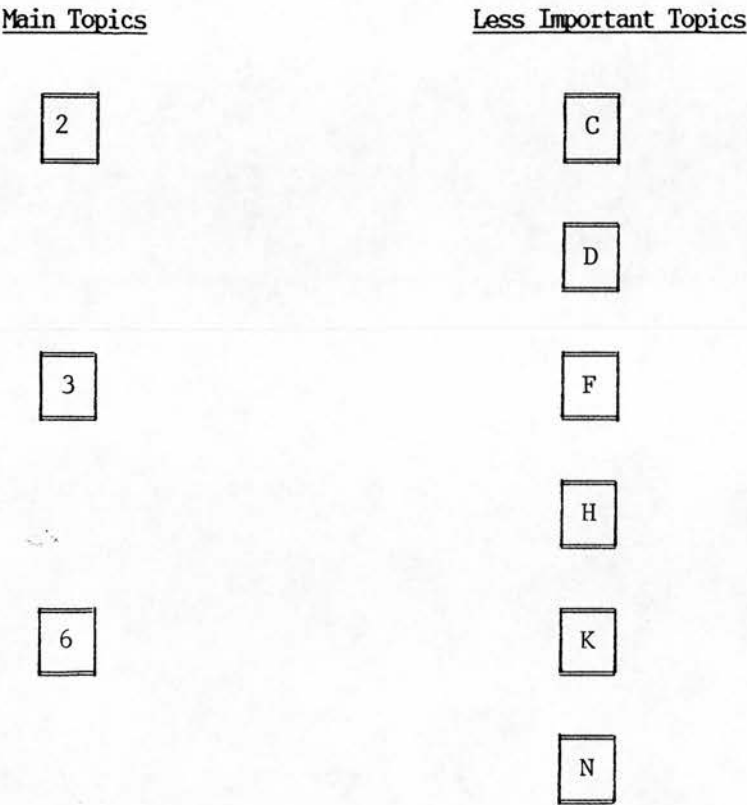
- 1. messages in the home
- 2. messages in the army
- 3. messages from space
- 4. messages "on the move"
- 5. messages sent by air
- 6. messages in a business or office

Choose from:

- A cordless telephones
- B codes and cyphers
- C viewphones
- D CB radio
- E light signals
- F car telephone
- G radio waves
- H telex (typed message)
- K airmail letters
- L facsimile (exact copy)

Figure 4.7.2

Modern Communications 2



- Choose from

1. hi-fi sets

2. records

3. tape-recorders

4. studios

5. microphones

6. compact discs
- Choose From

A stereophonic sound

B quadraphonic sound

C 45 rpm

D 33 1/3 rpm

E halter mike

F reel-to-reel

G radio microphone

H cassette recorder

K quality of sound

L soundproofed walls

M advanced equipment

N difficult to damage

Figure 4.7.3

Text Organisation (Level 3)    Your name \_\_\_\_\_

Modern Communications 3

Main Topics

Less Important Topics

4

6

12

8

7

11

5

15

19

Choose from:

1. 14-day timer
2. main ways of videorecording
3. V.H.S.
4. types of VCRs
5. future developments in videorecording
6. videotape (used again)
7. hired films
8. common uses for videorecording
9. videodiscs used for reference
10. Betamax
11. time-shifting
12. videodisc
13. 8-day timer
14. freeze-frame
15. home-made video films

Figure 4.7.4

(Section 4.7.6 contd.)

No. of Changes Made in Set 2 (Text Organisation)

Answers: (class: S3 General (PR) n = 21)

	<u>Task Level 1</u>	<u>Task Level 2</u>	<u>Task level 3</u>
GP 1 (n = 7)	1	3	48
GP 2 (n = 7)	3	1	10
GP 3 (n = 7)	0	7	26
	==	==	==
Total Changes	4	11	84
	==	==	==

4.7.7 It will be seen that there was a small difference between Task Level 1 and Task Level 2 (as might be anticipated) but a substantial increase in the number of changes made at Task Level 3. This would seem to indicate that the grading principle increases the level of difficulty, certainly between the first two levels and the third level. What the 100% scores even at Level 3 demonstrate (once again) is the value of group discussion: each individual pupil obviously had problems with this level of task (no pupil's sheet was without changes) but collectively all 3 groups arrived at the correct results. This is borne out by the taped data which documents lengthy and productive discussions which were often quite heated. One point which gave rise to problems was the ordering off the main topics: there were fewer problems of relating less important topics to the main topics.

4.7.8 The text organisation tasks for sets 4, 5 and 6 were trialled by Carrie Woolverton (CW) at Liberton with an S3 Foundation/General Class (n = 27). JF reports having trialled at all 3 levels but only Level 2 materials have been returned. The task levels for this set of materials are as follows:

Level 1 Outline text-organisation chart to be filled in with brief (one-word) answers. Main headings supplied. A list of the words that "the speaker will mention" was also supplied, with any words not understood to be explained by the teacher (for chart see Figure 4.7.5).



The History of English Words

Text Organisation 1

Latin and Greek Words in English

<u>Language</u>	<u>Uses</u>	<u>One Example Word</u>
Latin	1	
	2	
	3	
Greek	1	
	2	
	3	

Figure 4.7.5

Level 2 Outline text - organisation chart with some helpful headings.

Level 3 Outline text - organisation chart with first section done. Other two sections to be completed without guidance.

4.7.9 The difficulty of the tasks were reported as follows:

	Very Easy		Moderately Difficult		Very Difficult
	<hr/>				
S3 Gen/Foundation (Level 1 only)	1	2	3	④	5
S3 Credit (Level 1)	①	2	3	4	5
(Level 2)	①	2	3	4	5
(Level 3)	①	2	3	4	5

These estimates were borne out by the mean scores for the two classes at Level 1, which were as follows:

S3 Gen/Foundation      51.75%  
(n = 19)

S3 Credit                      83.09%  
(n = 27)

(The pupils were given one mark for each word which appeared

in an appropriate box).

4.7.10 The main conclusions to be drawn from the Text Organisation data, therefore seem to be as follows:

- (1) Text Organisation tasks in themselves are not impossible for S3 pupils from Foundation level and upwards; indeed, given appropriate assistance, they can be found to be very easy by S3 General pupils;
- (2) Grading of the tasks is quite straightforward, being related to the amount of support that is given to the pupils in terms of pre-organisation of material and the limitation (or otherwise) of the range of options open to the pupil. In other words, the pupil can be helped by being invited to choose from only main points or only subordinate points; by being given the options in sequence as they occur in the talk or not; by being invited to choose primarily points that actually occur (less difficult) or from among a range of options including distractors (more difficult), and so on. The parameters of difficulty that were used may be summarised thus:

<u>Less Difficult</u>	<u>More Difficult</u>
1. no distractors	some distractors
2. main/sub points listed separately	main/sub points listed together
3. main/sub points listed as they occur in the talk	main/sub points listed in random order
4. main/sub points are chosen from a list	main/sub points have to be written down

(3) Finally, the usefulness of group discussion in performing problem-solving tasks of this kind should be emphasised: we have seen how mediocre individual performances can be vastly improved as a result of such discussion.

#### 4.8 Pre-Questions

4.8.1 As previously explained in sections 2.12 and 2.13, the work done in this area had 3 main aims:

- (a) To trial materials in which pupils had to respond orally to inputs for which pre-questions had been given according to a graded scheme:
- (b) To trial materials in which pupils had to respond using pictures to inputs for which pre-questions had been given according to the graded scheme previously referred to:
- (c) To compare experimentally the performance of a pupil who

had been given pre-questions for a given input with those who had simply been given generalised instructions to listen for the main points, in terms of the ability to answer questions related to recall of the main points of the input.

#### 4.8.2 The principle of grading used was as follows:

Level 1 The talk has three main points and two examples for each point. The pupils are given the three main points and told the questions which they will be asked involving recall of the two examples for each point.

Level 2 The talk has the same structure as previously described. This time the pupils are given two examples for each main point and were told that they would be asked to recall the main point for each pair of examples.

Level 3 The talk has the same structure as previously described. This time the pupils are given no specific information but are told the questions which they will be asked involving recall of both the three main points and the two examples of each point.

#### 4.8.3 The materials were trialled as follows:

Oral Response - Sets 1/2 St Mary's Bathgate (PR) (level 2 only) S4 CSE (n = 11)

Set 1 Dalkeith High School (HD) (3 levels) S3 General (n = 9)

Pictorial Response - Set 1 Dalkeith High School (HD/MW) (3 levels) S3 General (n = 20).

Experiment - Sets 4, 5 and 6 Westcalder High School (LH/MW) S3 Credit (n = 26).

4.8.4 Oral Response. The taped data from Helen Dawson will be discussed here since it is the only oral response data relating to all 3 task levels. These data reveal that her S3 General class found the Level 1 and Level 2 tasks both easy, but it is interesting to note that while it took the teacher only 50 seconds to elicit the 6 points (ie. 3 x 2 examples) required for the Level 1 task, it took her 1 min. 40 secs. to elicit the 3 main points required for the Level 2 task. The extra time was taken up by two things: first, the fact that one of the pupils had not been able to get the first main point, and secondly, the problems which another pupil had in replying to the third question (ie. the third main point) in terms of an acceptable summary. (The examples given to the pupils were: (1) working at home, (2) neighbourhood offices; and the main point made by the speaker was that the third way in which computers can change jobs was by changing how and where people work of "the way they work and where they work"). The pupil volunteering an answer for this did so by giving the

examples again (P = Pupil, T = Teacher):

(P) the workers can sit at home + and er do er + do + their +  
and they then have to go into the office + and they can fiddle  
with their computers + and the results go into their office +

(T) that's right + so what's the basic change then +

(P) they miss traffic +

(T) oh + I see what you mean + yes of ok + but as far as jobs  
are concerned then + how would you sum it up David +

(P) sit at home and do your work +

(T) yea + that's fine.

We see that the teacher was not in fact, able to elicit the  
generalised point which was at issue.

4.8.5 The pupils recorded a much greater level of difficulty with  
task Level 3. One pupil reveals that he didn't get any of the  
points. The teacher was successful in eliciting the  
information, but pupils gave a "too much information" and  
"information coming too fast" as reasons for the difficulty  
they experienced as this task level.

4.8.6 The evidence from this class is therefore that the three



levels did operate as predicted:

- (1) The pupils found it easier to recall examples when main points were given than main points where examples were given (Level 1 and 2 respectively);
- (2) The pupils found recall of both main points and examples much more difficult than when some of the information was given (Level 3);
- (3) With the help of the pre-questions, however, the pupils were able to collectively finish nearly all the required information.

4.8.7 The data discussed here do not, of course, tell us how the pupils would have performed had they not been given the pre-questions, but it does indicate a principled way of grading the field of "advance organisers" that can be provided to pupils for expository inputs.

4.8.8 Pictorial Response. Because of the format required by the use of pictures, it was not found possible with these materials to differentiate levels of tasks. All the tasks were therefore of the Level 1 type, where pupils were asked to provide two examples for each of 3 main points using the pictures provided (for a sample exercise see Figure 4.8.1). Nine of the 20 pupils in this class had already heard the input, albeit some

months previously.

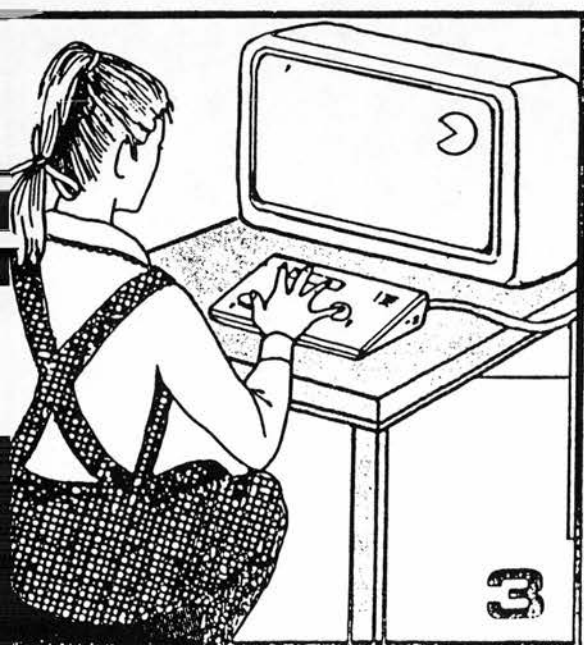
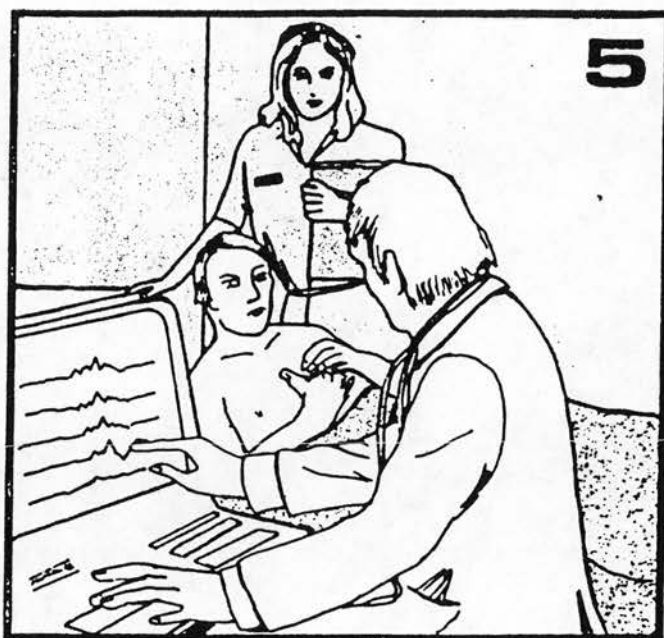
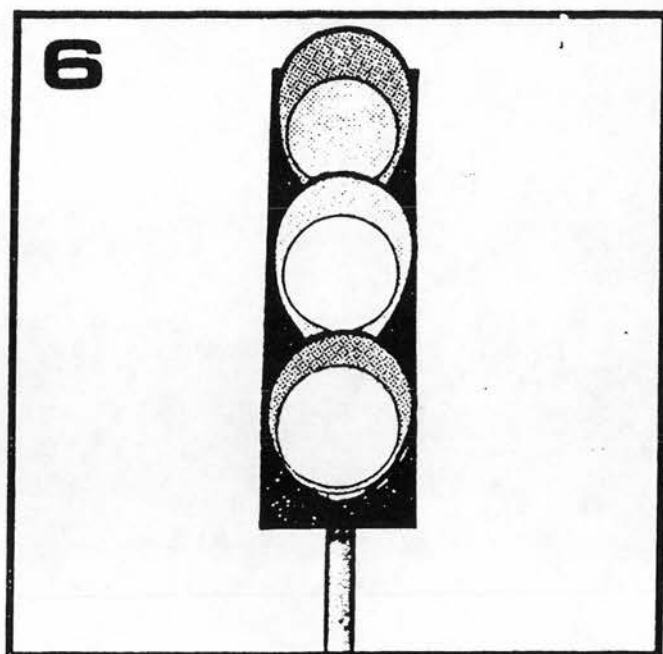
All the pupils found the task easy to do, but responded much more positively to it than to the corresponding oral response task, in spite of the fact that some of them had listened to the input before.

The task could have been made more demanding if "distractor" pictures had been provided. Also, it should be remembered that this was an S3 General class: presumably a Foundation class might have found it a bit more difficult.

4.8.9 The trialling therefore confirmed that it is possible to devise pictorial response material for expository input and pupils do find it more motivating. However, it must be said that not all expository material would lend itself with this, and the easier thing would probably be to work backwards from illustrations (for example, from a worksheet) to the input and then the problem of providing the visual task would simply be a matter of reproducing the illustrations and having the pupils respond on sheets similar to those used for the materials under discussion.

#### 4.8.10 Experiment

The purpose of the experiment was to see whether pupils who had been given advance organisers in the form of pre-questions would perform significantly better than those who had not.



(Figure 4.8.1 contd.)

Pre-Questions (Level 1)

Name \_\_\_\_\_

Class \_\_\_\_\_

Computers 1  
(TYPES OF COMPUTERS)

ANSWER SHEET

(You have to answer these questions by giving the correct number of the pictures that you have been given. For example, if you thought that picture No. 5 was an example of a use of a main-frame computer, you would put that number in one of the spaces for question 1).

(1) A main-frame computer might be used for:

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(2) A mini-computer might be used for:

(a) \_\_\_\_\_

(b) \_\_\_\_\_

(3) A micro-computer might be used for

(a) \_\_\_\_\_

(b) \_\_\_\_\_

This experiment has already, been fully discussed in sections 4.10 to 4.12 above. It will be remembered that, although there was indeed an observed difference between the two groups it was not statistically significant.

## 5. Summary

In this chapter, six sets of listening comprehension materials designed for Scottish S3/S4 pupils were described, and salient issues arising from their trialling were discussed. Conclusions and possible applications will be presented in the next chapter.

## Chapter 6

### CONCLUSIONS ARISING FROM THE PROJECT AND POSSIBLE APPLICATIONS TO THE PRESENT CONTEXT OF LANGUAGE TEACHING IN SCOTLAND

#### 0. Overview

This last chapter will be in two sections: Section A will briefly summarise the main conclusions arising from the work described in previous chapters and exemplified in Volume Two; Section B will relate those conclusions to recent and on-going developments in the teaching of English in Scotland.

#### Section A: Conclusions

#### 1. Nature of Project

- 1.1 The aim of the present work was to design and trial expository listening comprehension materials for S3/S4 pupils in Scottish Secondary Schools which would complement, and be a part of, the work done in the Scottish Education Department's Listening Comprehension Project (1982-85). In addition, the materials should satisfy certain criteria relating to: (1) having a "principled" basis; (2) being appropriate to the target group; (3) being purposeful or transferable; (4) being graded in some principled way; (5) being appropriately "authentic" and (6) involving as little language production as possible. In addition, the inputs should be "expository" in nature.



1.2 The principles on which the materials were based (Criteria 1 and 4) related to empirical work done in the field of language comprehension, and, more specifically, to empirical work done by the Listening Comprehension Project team themselves. The principles thus derived related to (1) text structure/organisation; (2) use of pre-questions; (3) in-text prediction; (4) importance of gist/summary; and (5) the use of group-work.

1.3 The end-products were intended to be exemplars of possible approaches to the handling of listening comprehension in Scottish schools by classroom teachers. It was not therefore advisable to produce materials which would involve undue expenditure of money or time. (It should be noted, in this connection, that the off-air recording of educational programmes, such as the programme exploited for the Cycle 1 materials, can be done by schools without problems of copyright.)

## 2. Inputs

2.1 The trialling showed that it is possible to grade expository materials in terms of pre-structured materials as opposed to materials not so structured and this was supported by significant findings. The pre-structuring can be done in terms of text-organisation, and inputs can be produced by giving tasks based on simpler or more complex outlines, the organisation of which can be more or less clearly signalled.



Findings reported here support the value of such signalling as a principle of grading but not conclusively in statistical terms. These inputs could be delivered to the class, or recorded on audiotape or videotape if repeated showings were desirable. Recording of tape input also permits of editing as appropriate.

2.2 If a pictorial response is envisaged (see below), then the input could be constructed from a series of drawings or pictures (as from say, a worksheet). A simple labelling or numbering response could then be devised along the lines demonstrated in the report.

2.3 Off-air educational programmes can be used for comprehension - input, but probably in most cases some editing would be desirable and this facility should ideally be available in schools. Such inputs will be more difficult due to the lack of explicit text structure for pupils, so they should perhaps be preceded by structured inputs perhaps on a related topic, particularly for less able listeners.

### 3. Pre-questions

3.1 Pre-questions and other advanced organisers help to focus the pupils' attention on what is required of their listening, and the findings of the trialling tend to support this point of view, though not conclusively.

3.2 The exercise on pre-questions incidentally revealed that with respect to the materials trialled:

(1) It was easier for the pupils to locate examples if main points are given, than vice-versa;

(2) It is more difficult to give both examples and main points.

3.3 The trialling showed that pupils may respond more enthusiastically if they are given pictorial response tasks as opposed to written tasks.

#### 4. Prediction

4.1 Two kinds of prediction exercise were trialled:

(a) from a title and

(b) in text.

4.2 Predicting from a title was a skill in which some pupils were more successful than others. In general, pupils found it easier to predict from "prompts" than to make up predictions of their own. Sometimes, pupils' false predictions interfered with their comprehension of the input.

4.3 Varying degrees of skill were also revealed in in-text prediction. In this area it was not possible to come to a comprehensive scheme of grading, although it was discovered

that some predictions that involved attitudinal and similar factors were more difficult than those which did not. There was indicative evidence that practice in in-text prediction improved performance.

## 5. Text Organisation Analysis

5.1 Although this might be thought of as an abstract and difficult task, most pupils coped with the tasks involved very well, and indeed found some of them too easy.

5.2 The trialling also showed that most pupils (certainly from S3 General level) can also handle text-organisation charts if they are given adequate support. This support can be graded in terms of:

(1) help given with distinguishing main points from subordinate points:

(2) number of distractors built into the task.

There was evidence that the first of these supports was the more significant in terms of ease of performance.

## 6. Group Work

There were numerous examples of the value of group work in improving pupils' responses, and in raising the quality of collective responses, notably in terms of text-organisation

analysis tasks.

7. Grading

There was also some indication of the value of pupils' working their way through the different levels of the materials provided, in terms of coping with more advanced tasks.

8. Conclusions: Summary

The main purpose of the present work was that of validating exemplar materials according to certain stated criteria and principles. The results of the trials tend to show that it is possible to grade expository inputs in a principled way which teachers should find quite easy to use in the classroom situation; and that it is possible also to grade Text-organisation and Prediction (title) tasks in principled ways. In-text Prediction is proposed as a useful exercise, but it is not possible at this stage to suggest one simple way in which this task can be graded, since so many complex factors are involved.

Section B: Applications To The Present Scottish Context

9. Situation At The Inception of The Project

The situation with regard to the status of the teaching of listening comprehension at S3/S4 level has changed

significantly in the last few years, so it would be useful to contrast the circumstances prevailing at the inception of the Listening Comprehension Project with those prevailing now.

As a result of the Munn and Dunning Reports on curriculum and Assessment respectively in Scottish Secondary Schools (see Kirk 1982), there was a substantial revision of both the curricular and assessment arrangements at this level. Some of the principal aims of this revision were to provide relevant teaching across the whole range of ability which would be assessed in the light of clearly established criteria.

#### 10. Standard Grade Certificate

In terms of assessment, the proposal was for a flexible "Standard Grade Certificate" to operate at three levels: (in ascending order of achievement) Foundation, General and Credit. To some extent there might be overlap between neighbouring levels, and indeed it might be possible for a candidate to sit for two neighbouring levels (or even, initially, all three levels). The levels are related to seven grades as follows: Credit - Grades 1 and 2; General - Grades 3, 4 and 5; Foundation - Grades 6 and 7. The allocation of candidates to Grades is established by the use of "Grade Related Criteria" (GRC).

11. Standard Grade English

In a bold and innovative move, it was decided that all four language modes of English (Reading, Writing, Talking, Listening) would be assessed separately. Further, it was decided that Reading, Writing and Listening would each be assessed by an external examination, although internal (school) assessments would also be called for.

12. Standard Grade English and Listening Examination

The arrangements for the English Standard Grade Examination were published by the Scottish Examination Board (Dalkeith, Midlothian: January 1984) in a publication entitled Scottish Certificate of Education Standard Grade Arrangements in English at Foundation, General and Credit Levels in and after 1986, hereafter referred to as (SEB 1984). In this publication, with respect to "assessable objectives", for listening, six main listening purposes are identified:

- to gain overall impression, gist, of a message,
- to obtain particular information from a message,
- to grasp ideas or feelings implied in a message,
- to evaluate the attitudes, assumptions and arguments expressed in a message,
- to appreciate the techniques used in a message,
- to enjoy and obtain enrichment from a message.

(SEB 1984:30).

Grade Related Criteria are also listed. The Summary GRC for Grade 1 listening (the highest grade), for example, are specified as follows: "The candidate will demonstrate in writing that he has a firm grasp and sensitive appreciation of what he listens to. He will demonstrate his competence in relation to some of the main purposes of listening. He will be able to understand messages that go beyond what is immediately accessible or related to personal interests and experience. Some of them will feature unfamiliar abstract ideas and complexity of structure and tone" (SEB 1984:37).

The format of the examination consisted of three 40 minute papers, one at each level. The input for the examination usually consisted of an authentic listening text recorded off-air, lasting for about six minutes or so. Sources ranged from popular interviews and nature programmes to background news reports and programmes like Alistair Cooke's "Letter from America". Candidates listened to the input twice and were allowed to take notes and look over the questions they were going to be asked. The questions were either multiple-choice or free answer, and covered a range of listening purposes, and also covered the different grade levels catered for by each paper.

13. Impact of the Standard Grade Listening Test

One of the immediate effects of the decision to test listening was to heighten awareness of the dearth of teaching material



specially designed for the target audience, as has been noted earlier (p. 97 above). There was even uncertainty about how such materials might be devised in any principled way. It was to suggest some approaches to these problems that the SED Listening Comprehension Project was set up.

It might be argued that it was rather late in the day to set up a fundamental research programme beginning in 1982 and not due to report until 1985, which was intended to underpin a syllabus starting in the same year as a national examination in 1986. On the other hand, given that the government proposals on implementation of the Munn and Dunning Reports did not appear until March 1980 (Kirk 1982:83) it is difficult to see how substantial research funding could have been made available much sooner.

#### 14. Positive Effects

Imminent examinations, like imminent executions, have been known to concentrate the mind wonderfully; and, in the case of examinations, at least, this does not apply only to the intended "victims". The Standard Grade Listening Comprehension Test created pressure, both centrally and locally, for relevant materials to be produced. It has been argued here that the SED Listening Comprehension project succeeded in its aim of providing viable "templates" for possible teacher-generated materials. In addition, both national and regional working groups were producing

motivating, classroom-tested materials. (The English Initial Guidelines: Standard Grade, produced by the Central Support Group for English, and the English Standard Grade: Exemplar Materials (eg. "The Battle of Lexington"), devised by the Education Resource Service, Lanark Division, Strathclyde Regional Service, both issued by the Scottish Curriculum Development Service, Edinburgh, June 1987, are two sources from many). There can be little doubt that commercially produced materials for native-speaker Listening Comprehension would in due course have become available, as is already happening with the other modes.

15. Problematic Aspects

15.1 In spite of some evidence of progress, there remained problematic issues, some relating to the Standard Grade Examination generally, some relating to listening comprehension in particular. Among the more general issues were:

(a) a general state of low morale in the teaching profession, often resulting in industrial action, hindered necessary development work across a range of subjects;

(b) the implementation of Standard Grade was, rightly or wrongly, seen as exploitative by many teachers and became a focus for discontent;

(c) part of this discontent was ascribed to the complexity of the examination, and working parties were therefore set up to attempt to simplify the examination in the various subject areas.

15.2 In such a review, as far as English was concerned, the Listening paper was obviously at risk, for these reasons:

(a) Listening was the most novel of the modes in teachers' experience. Unlike the case of Modern Languages, there had not been any tradition of Listening being systematically taught or examined in the mother tongue;

(b) the Listening examination was felt, even by some of those mostly closely associated with it, to have certain serious design limitations;

(c) the examination itself was expensive and complicated in its use of copyright material and the provision of cassettes, playback facilities, etc. (The same requirements existed for Modern Languages, but of course the scale was much smaller.)

It might also have been noted with interest that the new GCSE examination in England and Wales had not followed the Scottish lead in testing Listening as a separate mode.

15.3 The results of the review were published by the Scottish Examination Board in 1987 as Scottish Certificate of Education

Standard Grade: Revised Arrangements in English at Foundation, General and Credit Levels in and after 1989, hereafter (SEB 1987). In this document, the main purposes of the four modes, including Listening, were again listed as they had been previously (see Section 2). However the document went on to say (SEB 1987:7):

"While the concept of a four-mode English curriculum reflects the linguistic processes which characterise teaching and learning in the subject, in practice, the modes of Talking and Listening are closely related. Talking and Listening exist on a continuum of interaction: at one extreme there is the sort of talk whose intention is to communicate with minimal response on the part of the listener; at the other extreme is the sort of listening whose purpose is to receive communication, with minimal opportunity to respond; between the two extremes is the sort of situation where the purpose is to engage in discussion, which features talking and listening in roughly equal proportions.

Accordingly, for purposes of certification, the Listening mode will be subsumed under Talking, resulting in three assessable elements: Reading, Writing and Talking."

It is probably fair to say that explicit reference to Listening Skills is practically non-existent in the rest of the document.

## 16. Implications of Revised Standard Grade Arrangement

- 16.1 It would not be appropriate here to engage in a lengthy critique of the SEB's decision, which in any case was partly related to non-syllabus considerations. The case for Listening was argued in Chapter 1 (Sections 2 and 3) of the

present work. It will only be noted here that the revised arrangements ignore Brown and others' (1984) findings that it is precisely in the area of the "transactional long turn" (i.e. towards the two "extremes" of the "continuum") that competency has to be developed. It also goes against the evidence from the SED Listening Comprehension project adduced in the present work which shows, as has been pointed out earlier, that pupils in the target group do, indeed, have problems in handling transactional speech and can be helped with these problems (see Chapter 1, Section 3.7; Chapter 3 passim, but particularly Section 3.3; chapter 5, passim; see also Anderson and Lynch, 1988).

16.2 The present situation therefore is that, while there is, of course, nothing to prevent teachers from developing Listening Skills in the areas where attention is needed, there is also now nothing to encourage them to do so, or to encourage the development and dissemination of relevant materials. Informal feedback from teachers and others in the field seems to confirm that, indeed, very little is being done to develop or assess listening skills except marginally in relation to discussion.

17. Prospects for the Systematic Development of Listening Skills among Scottish Pupils

17.1 What then are the prospects for the systematic development of listening skills among Scottish pupils? This section will

briefly review the prospects for progress in some areas.

17.2 Primary and Lower Secondary: 5-14 Curriculum and assessment programmes for Scottish pupils aged 5-14 are currently under review. One of the key areas to be looked at will, of course, be Language. Most of the factors which have been discussed in the present work would clearly also apply lower down the school. It might be hoped, therefore, that the appropriate review group will, in its proposals, give due weight to Listening, and not in the rather tokenistic way in which this was done in, for example, the Bullock Report (see Chapter 1, Section 3, above).

17.3 Secondary: 14-16 As has been pointed out, there is nothing to prevent teachers using Listening materials, if such were readily available to them. Without official backing, however, it is difficult to see why either development groups or commercial publishers would be motivated to produce such materials.

17.4 Secondary: 16+ The case for extended listening practice is even easier to make in the upper school. Again, however, there is no major stimulus to provide such programmes, mostly as the skill is not examined. Some listening practice does take place in a few enlightened schools which run "Study Skills" programmes. Beyond Secondary School, most Universities and Colleges seem to assume that the job has been done (or should have been done) by someone else! (This is in



spite of almost daily evidence to the contrary, easily available to anyone working in tertiary education).

- 17.5 Vocational Education: National Certificate Modules The provision of in-house training in Listening Skills is not entirely unknown among British employers (Richard Ellis, Queen's College, Glasgow - personal communication). In the United States, there is at least one consultancy firm which exists to provide, inter alia, Listening Skills development programmes and Listening Skills testing services to industry and education (Spectra Communication Associates, PO Box 5031, Contract Station 20, New Orleans, Louisiana 70118).

In Scotland, a National Certificate is provided on a modular basis, one of the aims of which is to provide courses which reflect employers' needs for "ascertainable skills in their workforce" (The National Certificate at Work, page 7. Published by the Scottish Vocational Education Council, Glasgow: November 1987).

For the current session (1989/90), there are five "Communication" Modules provided as follows: Communication 1 - Spoken Communication (40 hours); Communication 1 - Written Communication (40 hours); Communication 2 - (40 hours); Communication 3 - (40 hours); Communication 4 - (Double Module - 80 hours). It is noteworthy that, in all the four modules involving oral communication, Listening Skills are given their due weight.



Only the descriptors for Communication 4 will be quoted here; similar descriptors exist as appropriate for the lower levels. (The quotation has been rewritten slightly in order to explicate some abbreviations as used on the original.)

"Learning Outcome: To demonstrate an understanding of complex spoken communication.

Performance Criteria: (Note: In the criteria which follow, the word "communication" refers to an item of spoken communication (heard only or heard and seen) which is complex in its structure [and] use of language and is formal in nature).

(a) a correct identification of the type and purpose of a communication is made and the conventions of delivery used by the speaker are evaluated in terms of that purpose;

(b) an accurate summary account is given of significant information, important ideas and supporting details from a communication;

(c) the effectiveness, the significant information, important ideas and supporting details is evaluated in terms of the identified purpose of the communication;

(d) acceptable inferences are drawn from a communication about the writer's stance (point of view, feelings, preconceptions) and are justified with reference to the message;

(e) a full evaluation is given of the contribution made by a communication to a purpose identified by the student.

Instrument of Assessment: Restricted Response - Written or spoken.

Students will give answers in writing or in speech to questions designed to allow them to demonstrate an understanding of the content and form of items of spoken communication covering a range of purposes. These items of communication, which may be heard only or both heard and seen, will be complex in structure and language.

Evidence should be collected that the students have met each criterion on two occasions and in terms of two purposes. On each occasion all criteria which are relevant to the purpose in question must be met: it is not permissible to collect evidence from a range of partly completed tasks. The rules relating to support and the use of dictionaries and word processors set out above will apply.

This work may be part of projects or practical exercises set within the communication module or from activities in other vocational or social contexts."

(National Certificate Module Descriptor, Ref. No. 91004. Session 1989-90, pp 7-8 (slightly adapted). Published by Scottish Vocational Education Council, Hanover House, 24 Douglas Street, Glasgow, G2 7NQ).

- 17.6 The National Certificate descriptor for this module has been quoted in full here to show how well it fits in with the general programmatic approach to Listening which has been advocated and exemplified in the present thesis. It would seem to be the case that the kind of systematic and principled approach to handling expository listening inputs here described ought to fit quite easily into such a framework.

18. Recommendations for Research and Development

It is customary to conclude a thesis like the present one by making suggestions for further area uses of research. There would be no problem in making suggestions of this kind. It is clear that the whole area of listening comprehension is severely under-researched, especially when compared to reading comprehension, and there is clearly ample scope for various investigations concerning reading comprehension being replicated in the listening mode. It has been indicated in the present text how the project team made some limited advances in this area. It would also be very interesting to do longitudinal studies of the effects of some of the techniques presented here with various target populations of pupils and students.

However, it might also be argued that the time has now come to concentrate on the development of appropriate motivating materials for classroom trialling and use. The need has been established. Ways forward have been indicated by the SED Listening Comprehension Project with relation to descriptive, narrative and expository inputs and in a variety of other ways with reference to a whole range of inputs by working parties, development groups and classroom teachers who have applied their teaching expertise to this area. Given a supportive syllabus and assessment framework, part of which seems already to be in place in the National Certificate, there seems to be no inherent reason why Scottish pupils and students at all levels should not have access to principled and coherent programmes for the development and enhancement of this important language skill.

## BIBLIOGRAPHY

- Abercrombie, D. (1965) Studies in Phonetics and Linguistics London:Oxford University Press
- Amerson, B.E.M. (1974) The Effect of Instruction in Listening on the Development of Listening Comprehension Skills of Disadvantaged Post-secondary Youth. Doctoral dissertation, University of Kentucky. (Abstract: Dissertation Abstracts International, Vol. 35, p.5767A).
- Anderson, A. and Lynch, T. (1988) Listening. Oxford: Oxford University Press.
- Anderson, R.C., Reynolds, R.E., Schallert, D.L. and Goetz, E.T. (1977) "Frameworks for comprehending discourse." American Educational Research Journal, Vol. 14, pp. 367-81
- Armbruster, B. (1979) An investigation of the effectiveness of "mapping" text as a studying strategy of middle schools. Doctoral dissertation, University of Illinois. (Abstract: Dissertation Abstracts International, Vol. 40 p. 5369A)
- Ausubel, D.P. (1960) "The use of advance organisers in the learning and retention of meaningful verbal materials." Journal of Educational Psychology. Vol. 66, pp. 213-221.
- Ausubel, D.P. (1968) Educational Psychology; a Cognitive View New York: Holt, Rinehart and Winston.
- Barker, J.F. (1977) The Effect of Listening Instruction on Listening Test Scores. Doctoral dissertation, Brigham Young University. (Abstract: Dissertation Abstracts International, Vol. 38, p. 4565A).
- Bartlett, B.J. (1978) Top-level structure as an organizational strategy for recall of classroom text. Doctoral dissertation, Arizona State University. (Abstract: Dissertation Abstracts International, Vol. 39 p. 6641A).
- Bartlett, F.C. (1932) Remembering. Cambridge: Cambridge University Press.
- de Beaugrande, R., and Dressler, W. (1981) Introduction to Text Linguistics. (Longman Linguistics Library). London: Longman.
- Bird, D.E. (1953) "Teaching Listening Comprehension". Journal of Communication, Vol. 3, pp. 127-130.
- Blair, R.W. (Ed.) (1982) Innovative Approaches to language Teaching. Rowley, Massachusetts: Newbury House.
- Boodt, G.M. (1978) Direct Instruction in Critical Listening: its Effect on the Reading Progress of Children Identified as Remedial Readers. Doctoral Dissertation, Michigan State University. (Abstract: Dissertation Abstracts International, Vol. 39, p. 4044A)
- Bower, G.H., Black, J.B., and Turner, T.J. (1979) "Scripts in memory for text." Cognitive Psychology. Vol. 11, pp. 177-220.

- Boyd, B. (n.d.) Planning for English in S3 and S4. Edinburgh: Scottish Curriculum Development Service.
- Boyd, B. (1979) Beginning Group Work in S1. Edinburgh: Scottish Curriculum Development Service.
- Brown, A.L. and Day, J.D. (1983) "Macro-rules for summarizing texts: the development of expertise." Journal of Verbal Learning and Verbal Behaviour. Vol. 22, pp. 1-14.
- Brown, G. (1977) Listening to Spoken English. London: Longman
- Brown, G. (1981) "Teaching the spoken language." Studia Linguistica, Vol. 35, Issues 1/2, pp. 166-182.
- Brown, G., Anderson, A., Lynch, A.J., Shadbolt, N. and Wallace, M. (1983-85). Listening Comprehension Project Reports. Scottish Education Department. Mimeo. (First interim report: June 1983. Second interim report: April 1984. Third interim report: November 1984. Fourth interim report: April 1985. Final Report: September 1985.)
- Brown, G., Anderson, A., Shillcock, R., and Yule, G. (1984) Teaching Talk: Strategies for Production and Assessment. Cambridge: Cambridge University Press.
- Brown, G. and Yule, G. (1983) Discourse Analysis. Cambridge: Cambridge University Press.
- Brown, R. and Herrnstein, R.J. (1975) Psychology. Boston: Little, Brown.
- Burling, R. (1982) Sounding Right: an Introduction to Comprehension-based Language Instruction. Rowley, Massachusetts: Newbury House.
- Chomsky, N. (1959). Review of B.F. Skinner's Verbal Behavior Language. Vol. 35, pp. 26-58. (Reprinted in De Cecco (1967)).
- Chomsky, N. (1965) Aspects of the Theory of Syntax Cambridge, Massachusetts: MIT Press.
- Clark, H.H. and Clark, E.V. (1977) Psychology and Language: an Introduction to Psycholinguistics. New York: Harcourt Brace Jovanovich.
- Cohen, A. (1977) "Redundancy as a tool in listening comprehension" in R. Dirven (Ed.) Hörverständnis im Fremdsprachenunterricht/Listening Comprehension in Language Teaching. Kronberg/Ts: scriptor.
- Collins (1986) Collins Dictionary of the English Language. (2nd edition). London and Glasgow: Collins.
- Corder, S.P. (1973) Introducing Applied Linguistics. Harmondsworth, Middlesex: Penguin Education.
- De Cecco (Ed.) (1967) The Psychology of Language, Thought and Instruction. New York: Holt, Rinehart and Winston.



Department of Education and Science (1975) A Language for Life. London: HMSO

Devine, T.G. (1967) "Listening" Review of Educational Research. Vol. 37 (April 1967), pp. 153-158.

Devine, T.G. (1978) "Listening: What do we know after fifty years of research and theorising?" Journal of Reading, Vol. 21(4), pp. 269-304.

van Dijk, T.A. (1980) Macrostructures. Hillsdale, New Jersey: Laurence Erlbaum.

van Dijk, T.A. (1981) "Review of R.O. Freedle (Ed.) 1979." Journal of Linguistics, Vol. 17, pp. 140-8.

Dirven, R. and Oakeshott-Taylor, J. (1984) "Listening Comprehension: part 1." Language Teaching, Vol. 17, No. 4, pp. 326-343.

Dooling, D.J. and Lachman, R. (1971) "Effects of Comprehension on Retention of Prose." Journal of Experimental Psychology. Vol. 88, pp. 216-222.

Duker, S. (1968) Listening Bibliography. (2nd edition). Metuchen, New Jersey: Scarecrow Press.

Durkin, D. (1978/79) "What classroom observations reveal about reading comprehension instruction." Reading Research Quarterly. Vol. 14, pp. 481-533.

Ellis, R. (1986) Understanding Second Language Acquisition. Oxford: Oxford University Press.

Feldman, J. (1975) "Bad-mouthing frames" in R.C. Schank and B. Nash-Webber (Eds.) Theoretical Issues in Natural Language Processing. (Proceedings of a conference at the Massachusetts Institute of Technology, June, 1975). Cambridge, Massachusetts: MIT.

Fillmore, C.J. (1968) "The case for case" in E. Bach and R.T. Harms (Eds.) Universals in Linguistic Theory. New York: Holt, Rinehart and Winston.

Franks, J.J. (1974) "Toward understanding understanding" in W.B. Weiner and D.S. Palermo (Eds.) (1974) Cognition and the Symbolic Processes. Hillsdale, New Jersey: Lawrence Erlbaum.

Frederiksen, C.H. (1977) "Structure and process in discourse production and comprehension" in M.A. Just and P.A. Carpenter (Eds.) Cognitive Processes in Comprehension. Hillsdale, New Jersey: Laurence Erlbaum.

Freedle, R.O. (Ed.) (1977) Discourse production and Comprehension. Norwood, New Jersey: Ablex.

Geddes, M. and Sturtridge, G. (1979) Listening Links London: Heinemann Educational Books.

- Geleta, N. (1986) The Interactive Effects of Micro- and Macrostructural Processing During Text Comprehension. Doctoral dissertation, Catholic University of America, Washington, D.C. (Abstract: Dissertation Abstracts International, Vol. 47, p. 1245A).
- Gernsbacher, M.A. (1985) "Surface information loss in comprehension." Cognitive Psychology. Vol. 17, part 3, pp. 324-363.
- Geva, E. (1983) "Facilitating reading comprehension through flowcharting." Reading Research Quarterly. Vol. 18, No. 4, pp. 384-405.
- Gleason, H.A. (1961) An Introduction to Descriptive Linguistics. (Revised Edition). New York: Holt, Rinehart and Winston.
- Goelman, H. (1982) "Selective attention in language comprehension: children's processing of expository and narrative discourse." Discourse Processes. Vol. 5(1), pp. 53-72.
- Goldberg, N.J. (1978) A Study of the Effects of a Series of Lessons in Listening Comprehension, based upon Children's Comprehension in Reading Comprehension in Second Grade. Doctoral dissertation, University of Boston. (Abstract: Dissertation Abstracts International, Vol. 39. p. 2722A).
- Greene, J. (1986) Language Understanding: A Cognitive Approach. Milton Keynes: Open University Press.
- Grice, H.P. (1975) "Logic and conversation" in P. Cole and J.L. Morgan (Eds.) Syntax and Semantics, Vol. 3: Speech Acts. New York: Seminar Press.
- Guindon, R. and Kintsch, W. (1984) "Priming macropropositions: evidence for the primacy of macropropositions in the memory of text." Journal of Verbal Learning and Verbal Behavior. Vol. 23, pp. 508-518.
- Gumperz, J. and Hymes, D. (Eds.) (1972) Directions in Sociolinguistics: the Ethnography of Communication. New York: Holt, Rinehart and Winston.
- Haberlandt, K., Berian, C. and Sandson, J. (1980) "The episode schema in story processing." Journal of Verbal Learning and Verbal Behavior. Vol. 19, pp. 635-650.
- Hansen, J. (1981) "The effects of inference training and practice in young children's reading comprehension." Reading Research Quarterly. Vol. 16, pp. 391-417.
- Hausfeld, S. (1981) "Speeded reading and listening comprehension for easy and difficult materials." Journal of Educational Psychology. Vol. 73, pp. 312-319.
- Haviland, S.E. and Clark, H.H. (1974) "What's new? Acquiring new information as a process in comprehension." Journal of Verbal Learning and Verbal Behavior, Vol. 13, pp. 512-521.
- Horowitz, R. (1985) "Text Patterns: Part 1." Journal of Reading (February 1985), pp. 448-454.



- Howard, D.V. (1983) Cognitive Psychology: Memory, Language and Thought. New York: Macmillan.
- Howatt, A.P.R. (1984) History of English Language Teaching. Oxford: Oxford University Press.
- Hunt, M. (1984) The Universe Within: a New Science Explores the Human Mind. London: Corgi Books.
- Johnson-Laird, P.N. and Stevenson, R. (1974). "Experimental Psycholinguistics." Annual Review of Psychology. Vol. 25, pp. 135-160.
- Kent, C.A. (1984). "A linguist compares narrative and expository prose." Journal of Reading (December 1984): pp. 232-236.
- Kintsch, W. and van Dijk, T.A. (1978). "Toward a model of text comprehension and production." Psychological Review, Vol. 85, No. 5, pp. 363-394.
- Kintsch, W. and Greene, E. (1978). "The role of culture-specific schemata in the comprehension and recall of stories." Discourse Processes. Vol. 1, pp. 1-13.
- Kintsch, W. and Kozminsky, E. (1977). "Summarizing stories after reading and listening." Journal of Educational Psychology, Vol. 69, pp. 491-499.
- Kirk, G. (1982) Curriculum and Assessment in the Scottish Secondary School: a study of the Munn and Dunning Reports. London: Ward Lock Educational.
- Krashen, S.D. (1982) Principles and Practice in Second Language Acquisition. Oxford: Pergamon Press.
- Lorch, R.L., Lorch, E.P. and Mathews, P.D. (1985). "On-line processing of the topic structure of a text." Journal of Memory and Language. Vol. 24, pp. 350-362.
- Loveday, L. (1982). The Sociolinguistics of Learning and Using a Non-native Language. Oxford: Pergamon Institute of English.
- Lundsteen, S.W. (1979). Listening: its impact at all levels on Reading and other Language Arts. (Revised edition). Urbana, Illinois: Eric Clearinghouse on Reading and Communication Skills and the National Council of Teachers of English.
- Lynch, A.J. (1984) Materials produced for Listening Comprehension Project. Mimeo. Edinburgh: Scottish Education Department.
- Lyons, J. (1981) Language and Linguistics: an Introduction. Cambridge: Cambridge University Press.
- McKoon, G. (1977) "Organization of information in text memory." Journal of Verbal Learning and Verbal Behavior. Vol. 16, pp. 247-260.
- Mandler, G. (1967) "Organization and memory" in K. W. Spence and J. T. Spence (Eds.) The Psychology of Learning and Motivation. (Vol. 1). New York: Academic Press.

- Mandler, J.M. (1984) Stories, Scripts and Scenes: aspects of Schema Theory. Hillsdale, New Jersey: Lawrence Erlbaum.
- Mayer, R. E (1979) "Twenty years of research on advance organisers: assimilation theory is still the best predictor of results." Instructional Science. Vol. 8, pp. 133-167.
- Met, M. (1978) The Relationship between First and Second Language Listening Comprehension Skills in Primary Age Children. Doctoral dissertation, University of Cincinnati. (Abstract: Dissertation Abstracts International, Vol. 39, p. 5372A).
- Meyer, B.J.F. (1975) The organisation of Prose and its Effect upon Memory. Amsterdam, The Netherlands: North Holland.
- Meyer, B.J.F. (1977) "What is remembered from prose: a function of passage structure" in R. Freedle (Ed.) Discourse production and Comprehension. Norwood, New Jersey: Ablex.
- Meyer, B.J.F. (1981). "Basic research on prose comprehension: a critical review" in D.F. Fisher and C.W. Peters (Eds.) Comprehension and the Competent Reader: Inter-specialty Perspectives. New York: Praeger.
- Meyer, B.J.F., Brandt, D.M. and Bluth, G.J. (1980) "Use of the top-level structure in text: key for reading comprehension of ninth grade students." Reading Research Quarterly, Vol. 16, pp. 72-103.
- Meyer, B.J.F. and Freedle, R.O. (1976) "The effects of different discourse types on recall." Educational Testing Service.
- Meyer, B.J.F. and Rice, G.E. (1982). "The interaction of reader strategies and the organisation of text." Mouton, Amsterdam: Text (1-3), pp. 155-192.
- Miller, G.A. (1965) "Some preliminaries to psycholinguistics." American Psychologist, Vol. 20, pp. 15-20. (Reprinted in De Cecco (1967)).
- Minsky, M. (1975) "A framework for representing knowledge" in P.H. Winston (Ed.) The Psychology of Computer Vision. New York: McGraw-Hill.
- Moore, T. and Carling, C. (1982). Understanding Language: Towards a Post-Chomskyan Linguistics. London: Macmillan.
- Niegemann, H.M. (1982). "Influences of titles on the recall of instructional texts." Discourse Processing, pp. 392-399.
- Nooteboom, S.G. (1983). "Is speech production controlled by speech perception?" in van den Broecke et al. (Eds.) Sound Structures: Studies for Anthonie Cohen. Dordrecht: Foris.
- Northcroft, D. (1984) Hearsay. Edinburgh: Scottish Curriculum Development Service.
- Olson, G.M., Mack, R.L. and Duffy, S.A. (1981). "Cognitive aspects of genre." Amsterdam: Poetics, Vol. 10, pp. 283-315.

Pearson, P.D. and Gallagher, M.C. (1983). "The instruction of reading comprehension." Contemporary Educational Psychology. Vol. 8, pp. 317-344.

Rankin, P.T. (1926). "The measurement of the ability to understand spoken language." Doctoral thesis presented to University of Michigan, 1926. (Abstract: Dissertation Abstracts International, Vol. 12, pp. 847-848.)

Rankin, P.T. (1930). "Listening ability: its importance, measurement and development." Chicago Schools Journal, Vol. 12, pp. 177-179.

Richards, I.A. (1929). Practical Criticism. London: Kegan Paul.

Richards, J.C. (1983). "Listening comprehension: approach, design, procedure." TESOL Quarterly, Vol. 17, No. 2, pp. 219-240.

Richards, J.C. and Rodgers, T.S. (1986). Approaches and Methods in Language Teaching: a Description and Analysis. Cambridge: Cambridge University Press.

Sanford, A.J. and Garrod, S.C. (1981). Understanding Written Language: Explorations of Comprehension beyond the Sentence. Chichester: John Wiley.

Schaffer, M.P. (1977) The Effects of Reading, Listening and Television Presentations on Students' Verbal Comprehension. Doctoral dissertation, Columbia University. (Abstract: Dissertation Abstracts International, Vol.38, p 2674A).

Schank, R.C. (1972). "Conceptual dependency: a theory of natural language understanding." Cognitive Psychology. Vol. 3, pp. 552-631.

Schank, R.C. (1975). "The structure of episodes in memory" in D.B. Bobrow (Ed.) Representation and Understanding: Studies in Cognitive Science. New York: Academic Press.

Schank, R., and Abelson, R. (1977). Scripts, plans, goals and understanding: an enquiry into human knowledge structures. Hillsdale, New Jersey: Lawrence Erlbaum.

Schank, R.C. and Nash-Webber, B. (Eds.) (1975). Theoretical Issues in Natural Language Processing. Proceedings of a conference at the Massachusetts Institute of Technology, June 1975. Cambridge, Massachusetts: MIT Press.

SCOTVEC (1987) The National Certificate at Work. Glasgow: Scottish Vocational Education Council.

SCOTVEC (1989) National Certificate Module Descriptors: Session 1989/90. Glasgow: Scottish Vocational Education Council.

SEB (1984) Scottish Certificate of Education Standard Grade Arrangements in English at Foundation, General and Credit Levels in and after 1986. Dalkeith, Midlothian: Scottish Examination Board.

SEB (1987) Scottish Certificate of Education Standard Grade: Revised Arrangements in English at Foundation, General and Credit Levels in and after 1989. Dalkeith, Midlothian: Scottish Examination Board.

Shannon, D. (1985). "Use of top-level structure in expository text." Journal of Reading (February 1985), pp. 426-431.

Skinner, B.F. (1957). Verbal Behavior. New York: Appleton Century Crofts.

Slobin, D. (1966). "Grammatical transformations and sentence comprehension in childhood and adulthood." Journal of Verbal Learning and Verbal Behavior. Vol. 5, pp. 219-227.

Solso, R.L. (1979). Cognitive Psychology. New York: Harcourt Brace Jovanovich.

Spearritt, D. (1962). Listening Comprehension - A Factorial Analysis. Hawthorn, Victoria: Australian Council for Educational Research.

Sticht, T.G. (1972). "Learning by listening" in J.B. Carroll and R.A. Freedle, (Eds.): Language Comprehension and the Acquisition of Knowledge. New York: John Wiley.

Sticht, T.G. (1984). "Rate of comprehending by listening or reading" in J. Flood (Ed.) Understanding Reading Comprehensions: Cognition, Language and the Structure of Prose. Newark, Delaware: International Reading Association.

Sticht, T.G. and James, J.N. (1984). "Listening and Reading" in P.D. Pearson, (Ed.), Handbook of Reading Research. New York: Longman.

Svasti, S. (1985) The Effect of Listening Instruction on the Performance in the Social Studies Unit Test of Thai Sixth Graders. Doctoral dissertation, University of Southern Illinois. (Abstract: Dissertation Abstracts International, Vol. 47, p. 780A).

Tannen, D. (1979). "What's in a frame? Surface evidence for underlying expectations" in R. Freedle (Ed.). New Directions in Discourse Processing, Vol. 7, Norwood, New Jersey: Ablex.

Tannen, D. (1980). "A comparative analysis in oral narrative strategies" in W.L. Chafe (Ed.) The Pear Stories: Cognitive, Cultural and Linguistic Aspects of Narrative Production. Norwood, New Jersey: Ablex.

Taylor, B. (1982). "Text-structure and children's comprehension and memory for expository material." Journal of Educational Psychology. Vol. 74, pp. 323-340.

Thorndyke, P. (1977). "Cognitive structures in comprehension and memory of narrative discourse." Cognitive Psychology. Vol. 9, pp. 77-110.

Tulving, E. (1972). "Episodic and semantic memory" in E. Tulving and W. Donaldson (Eds.) Organization of memory. New York: Academic Press.



Upshur, J.A. and Palmer, A.S. (1974). "Measures of accuracy, communicativity and social judgements for two classes of foreign language speakers." Proceedings of the Third International Congress of Applied Linguistics. Copenhagen, 1972. Vols. 1-3: pp. 201-221. International Association of Applied Linguistics (AILA).

Wallace, M.J. (1982). "Developing Listening Skills for effective learning." Teaching English. Vol. 15, No. 2, pp. 14-19. (See Appendix).

Wallace, M.J. (1983). "Categorising Listening comprehension materials." Paper given to inaugural meeting of TESOL Scotland. Edinburgh, 1983. Mimeo. (See Appendix).

Wallace, M.J. (1985a). "Developing Listening Skills: Framework and Approach." Teaching English. Vol. 18, No. 2, pp. 4-8. (See Appendix).

Wallace, M.J. (1985b). "Prediction exercises as a method of developing 'on-line' listening comprehension skills." Informal presentation given to Edinburgh University Postgraduate Conference. Edinburgh, May 1985.

Webster's (1985). Webster's New Collegiate Dictionary. (9th Edition). Springfield, Massachusetts: Merriam-Webster.

Weimer, W.B. (1974). "Overview of a cognitive conspiracy: reflections on the volume" in W.B. Weimer and D.S Palermo (Eds.) Cognition and the Symbolic Processes. Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Wilhite, S.C. "Prepassage questions: the influence of structural importance." Journal of Educational Psychology. Vol. 75, No. 2, pp 234-244.

Wilt, M.E. (1950). "A Study of teacher awareness of listening as a factor in elementary education." Journal of Educational Research, Vol. 53, pp. 626-639.

Winitz, H. (Ed.) (1981). The Comprehension Approach to Foreign Language Instruction. Rowley, Massachusetts: Newbury House.

Winston, P.H. (Ed.) (1975). The Psychology of Computer Vision. New York: McGraw-Hill.

Woods, W.A. (1970). "Transition network grammars for natural language analysis." Communications of the Association for Computing Machinery. Vol. 13, p. 591.